

# ENVIRONMENTAL ASSESSMENT BOARD



## ONTARIO HYDRO DEMAND/SUPPLY PLAN HEARINGS

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VOLUME: 152

DATE: Wednesday, May 27, 1992

BEFORE:

HON. MR. JUSTICE E. SAUNDERS Chairman

DR. G. CONNELL Member


MS. G. PATTERSON Member

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ENVIRONMENTAL ASSESSMENT BOARD  
ONTARIO HYDRO DEMAND/SUPPLY PLAN HEARING

IN THE MATTER OF the Environmental Assessment Act,  
R.S.O. 1980, c. 140, as amended, and Regulations  
thereunder;

AND IN THE MATTER OF an undertaking by Ontario Hydro  
consisting of a program in respect of activities  
associated with meeting future electricity  
requirements in Ontario.

Held on the 5th Floor, 2200  
Yonge Street, Toronto, Ontario,  
Wednesday, the 27th day of May,  
1992, commencing at 10:00 a.m.

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VOLUME 152  
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B E F O R E :

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MS. G. PATTERSON	Member

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1 ---Upon commencing at 10:04 a.m.

2 THE REGISTRAR: Please come to order.

3 This hearing is again in session. Please be seated.

4 THE CHAIRMAN: Mr. Watson?

5 MR. R. WATSON: Thank you, Mr. Chairman.

6 A number of technical questions remain,  
7 and I have spoken with Mrs. Formusa this morning, and  
8 we are going to attempt to resolve those outside of the  
9 hearing, and that as a result has substantially  
10 shortened what I was going to do today.

11 I have one small point left, it will  
12 probably take a couple of minutes, and then I have  
13 notified Mr. Rodger and he is ready to proceed.

14 AMIR SHALABY,  
15 JOHN KENNETH SNELSON,  
16 JANE BERNICE TENNYSON,  
17 FREDERICK GEORGE LONG,  
BRIAN PAUL WILLIAM DALZIEL,  
HELEN ANNE HOWES; Resumed.

18 CROSS-EXAMINATION BY MR. R. WATSON (Cont'd):

19 Q. Panel, I would like to deal with the  
20 response portfolio issue, please.

21 I understand that the purpose of the  
22 portfolios are to respond to changes in the median load  
23 forecast; is that fair?

24 MR. SNELSON: A. It is to respond to a  
25 variety of circumstances, of which changes in the

1 median load forecast is one.

2 Q. And one of these changes would  
3 include a deficit in the load forecast as well as a  
4 surplus?

5 A. It covers both loads being higher or  
6 lower than the load forecast, yes.

7 Q. And I understand these portfolios  
8 that you have put forward are illustrative portfolios  
9 only?

10 A. Yes.

11 Q. And there is no cost effectiveness  
12 analysis at how these portfolios would respond to say a  
13 deficit situation?

14 A. By deficit do you mean the load being  
15 higher than forecast?

16 Q. Yes.

17 A. We have shown the upper load scenario  
18 that Mr. Dalziel described, but that is about all we  
19 have at the moment.

20 Q. Aside from that, there is no  
21 analysis?

22 A. I don't believe so.

23 Q. And in looking at these portfolios,  
24 Mr. Snelson, it is fair to say that there are no  
25 specific triggering mechanisms which have been



1 identified as well?

2 A. I think the triggering mechanisms are  
3 implicit, but they are not identified.

4 MR. SHALABY: A. I want to add a point  
5 on the analysis associated with the response portfolio.

6 I think we get a lot of information from  
7 examining the levelized unit energy cost of combustion  
8 turbines, for example, or from examining the  
9 non-utility generation, typical costs that can come to  
10 us.

11 These are the components that make up the  
12 response portfolio.

13 So I think Mr. Snelson is correct in  
14 saying we haven't done an integrated plan analysis, but  
15 the components themselves are known to us. Their  
16 environmental characteristics, their costs, their lead  
17 time are quantities that we have studied and can  
18 anticipate their impact on the system when they are  
19 added to it.

20 We have given costs of returning to  
21 service, mothballed units for example, which is another  
22 component of the response portfolio. That information  
23 is on the record.

24 Q. And in addition to the risks that are  
25 mentioned in these portfolios, in looking at the

1 responses that are identified you have no specific  
2 criteria for ordering these responses, do you?

3 A. Well, depending on what the  
4 contingency we are dealing with will be and what the  
5 options available at the time will be that the  
6 decisions will be made at the time to select the most  
7 appropriate ones.

8 Q. And the question is: You don't have  
9 any criteria for making those decisions. You are --

10 A. The criteria would be much in line  
11 with the criteria we use for planning: maintaining  
12 reliability, protecting the environment, maintaining  
13 low customer cost. These will be criteria that will be  
14 used in invoking the options in our response portfolio.

15 Q. So you have general planning criteria  
16 and that's it?

17 A. Those are pretty thorough, pretty  
18 powerful criteria.

19 Q. As I understand the response  
20 portfolios, Mr. Shalaby, they are a key element of the  
21 Update?

22 A. Yes.

23 MR. R. WATSON: Those are my questions,  
24 Mr. Chairman.

25 THE CHAIRMAN: Thank you, Mr. Watson.

1 Mr. Rodger?

2 MR. RODGER: Thank you, Mr. Chairman.

3 I gave Mr. Lucas some materials which I  
4 intend to refer to in this cross-examination. Perhaps  
5 that could be made the next exhibit, please.

6 THE REGISTRAR: Number 687.

7 ---EXHIBIT NO. 687: AMPCO's reference materials to be  
8 used in Panel 10 cross-examination.

9 MR. RODGER: And I have extra copies at  
10 the front for my friends.

11 CROSS-EXAMINATION BY MR. RODGER:

12 Q. Panel, having sat through and  
13 reviewed nine panels of testimony now, it appears to me  
14 that there are some rather fundamental and essential  
15 elements of Hydro's plan and Hydro's planning leading  
16 up to the Update. I just want to go through the key  
17 ones that my client perceives and see whether you agree  
18 with me or not.

19 The first fundamental goal of Hydro's  
20 plan seems to be that over the long term and over the  
21 short term Ontario ratepayers will be provided with a  
22 reliable electricity service.

23 Would you agree with that?

24 MR. SNELSON: A. Yes, that is one of our  
25 criteria, and an important one.

1 Q. That is an important one?

2 A. Yes.

3 Q. The next point is that in the context  
4 of your utility planning for the next 25 years that  
5 Ontario Hydro puts considerable emphasis and focus on  
6 having a flexible plan, and by that I mean a plan that  
7 is able to, is readily able to respond to a wide and  
8 diverse range of factors.

9 A. Yes.

10 Q. And another key point from the  
11 earlier testimony is that no matter which load scenario  
12 you look at, be it median, upper or lower, that the  
13 system will need further supply or demand additions in  
14 and above the existing system?

15 A. It will require further demand  
16 reductions or supply additions, yes.

17 Q. Would you also agree with me, Mr.  
18 Snelson, that there is no less uncertainty today than  
19 there was when Plan 15 was the favoured plan of Ontario  
20 Hydro?

21 A. Yes.

22 Q. Would you also agree with me that  
23 since planning around the median, since that approach  
24 explicitly accepts more risk than an even more flexible  
25 plan is required today than it was in 1989 and Hydro

1 takes the position that the Update is that more  
2 flexible plan?

3 A. We take the position that the Update  
4 plan is the plan that has the required amount of  
5 flexibility for our circumstances today, yes.

6 Q. And you will agree that the planning  
7 around the median approach, that does explicitly accept  
8 more risk as compared to the initial DSP?

9 A. In some respects, yes.

10 [10:15 a.m.]

11 Q. And finally Mr. Snelson, with respect  
12 to the issue of new major supply, would you agree that  
13 the issue is not if Ontario Hydro will require new  
14 major supply at some point; it's a question of when  
15 that new major supply will be required?

16 A. In most circumstances we expect to  
17 require major supply.

18 Q. Now, back in the demand management  
19 panel, you discussed and the panel discussed the  
20 importance of being able to monitor how well you were  
21 doing with respect to demand management, and for  
22 example, if you weren't doing as well as you had  
23 anticipated, then a response might be one of the  
24 elements of the response portfolio that we have heard  
25 about in the past few days.



1 I wonder if you could turn to page 1 of  
2 Exhibit 687, the exhibit I just recently entered, and  
3 this is taken from Ontario Hydro's submission on 1993  
4 electricity rates to the Ontario Energy Board dated  
5 April 92. And what this table 3-1 points out, as I  
6 understand it, is it shows and compares your targets or  
7 your planned amount of demand management for 1991 and  
8 it also shows the actual results that you achieved; is  
9 that correct, Mr. Snelson?

10 A. Perhaps Mr. Shalaby could deal with  
11 this question.

12 Q. Mr. Shalaby?

13 MR. SHALABY: A. That is what it shows,  
14 yes.

15 Q. And this has been highlighted on, but  
16 I just wanted to ask some question on some of the  
17 specifics.

18 If you look under the residential sector  
19 we see under the plan program targets for 1991 and this  
20 is the furthestmost left column, for load shifting it's  
21 not applicable to the residential sector, the next  
22 column has the heading Save, and I take that to be  
23 energy conservation, Mr. Shalaby?

24 A. Yes.

25 Q. The target or the planned amount to

1 be realized was 66.9 megawatts for 1991. If we go over  
2 to the next column to the right we see that the amount  
3 that Hydro actually saved, your actual results were  
4 52.6 megawatts. So I take from that, that that is a  
5 shortfall of approximately 20 per cent for that target;  
6 is that fair?

7 A. In that sector, yes.

8 Q. Now, if we go down the next  
9 column, the industrial sector, we see that load shifting  
10 had a target of 70 megawatts, and the actual results  
11 for load shifting in the industrial sector was 36.6  
12 megawatts; is that correct?

13 A. Yes.

14 Q. And that is a shortfall of  
15 approximately 50 per cent?

16 A. Yes.

17 Q. And on the conservation side you  
18 intended to save 61.5 megawatts, and the industrial  
19 sector did substantially better, it in fact saved 94.5  
20 megawatts and that exceeded the target by approximately  
21 50 per cent; is that correct, Mr. Shalaby?

22 A. That's correct.

23 Q. Could you explain for me the reason  
24 why the industrial sector did so well with respect to  
25 that target?



1                   A. Without knowing the details of what  
2 actually -- who took on what programs in general one  
3 has to conclude that the industrial customers  
4 participated more than expected in energy conservation  
5 programs and the measures worked out.

6                   Q. And given that result last year, does  
7 Ontario Hydro expect that the industrial sector will  
8 continue to overachieve in the demand management  
9 targets in future years or is this an exceptional  
10 circumstance this year?

11                  A. I don't know the answer to that.

12                  Q. Mr..Shalaby, in your direct evidence  
13 you did say that there was 250 megawatts less savings  
14 that were expected in the DDS aspect of demand  
15 management. I just want to confirm my understanding,  
16 you are not changing your targets at all for the end of  
17 the planning horizon, that that 250 megawatts will be  
18 made up elsewhere but it just hasn't been identified  
19 yet, is that correct?

20                  A. Without arguing whether the number is  
21 right or not, because I think the 250 is a reduction in  
22 load shifting, about 150 in DDS, but the answer to your  
23 question is yes.

24                  Q. Now, staying with page 1 of the AMPCO  
25 exhibit. In the commercial sector we see that the

1 target for shifting was 5 megawatts and the actual was  
2 1.3 megawatts, so there was a 75 per cent shortfall  
3 with that target; is that correct?

4 A. Yes.

5 Q. Can you explain why there was such a  
6 large shortfall with respect to that target?

7 A. Again, less than expected  
8 participation in load shifting activities in the  
9 commercial sector. Those are typically cooling at  
10 night to be used in the daytime, that is a major load  
11 shifting activity there, and perhaps there was less  
12 participation.

13 Q. And staying with the commercial  
14 sector, the savings for that sector were estimated to  
15 be 70.6 megawatts and the actual result was 65.4  
16 megawatts, roughly a shortfall of 8 per cent for that  
17 target?

18 A. Sounds about right, yes.

19 Q. Now, in the paragraph above the  
20 table, paragraph 2, about halfway down there is the  
21 statement these program results were slightly lower  
22 than planned despite the strong efforts in all aspects  
23 of program development and delivery to overcome the  
24 effects of the economic downturn which continues in the  
25 marketplace.

1                   Is it fair to state that notwithstanding  
2       those strong efforts to achieve those targets, except  
3       for the industrial sector, Hydro fell short on the rest  
4       of its targets, and you are in a position already, to  
5       some degree, of playing catch-up in achieving your  
6       demand management goals?

7                   A. Well, I think looking at certain  
8       components without others may not be the right  
9       perspective. I think we should look at demand  
10      management as a whole. If you exclude the winners and  
11      look at others that did not achieve the targets, I  
12      suggest to you may not be the right perspective.

13                  Because in other years and in previous  
14      years, other sectors did better than the industrial.  
15      So there would be cycles in the economy that perhaps  
16      permit the commercial sector to do better or cycles in  
17      product development that would permit the residential  
18      sector to do better or legislation that would permit  
19      the residential sector to do better. So I think to  
20      focus in one year and look at different sectors and  
21      make the kind of conclusion is pretty hasty, I think.

22                  Q. So I take it by looking at last  
23      year's targets, your position would be that it is just  
24      too early to start and re-evaluate any of the programs,  
25      based on just last year's results?

1                   A. It's too early to draw the conclusion  
2                   that certain sectors are not going to make their  
3                   targets. Programs are being re-evaluated continuously,  
4                   to my knowledge.

5                   Q. When would you make that decision,  
6                   Mr. Shalaby? Would it be after two years' results,  
7                   would it have to be three years? Keeping in mind the  
8                   ambitious targets that Hydro set for itself by the year  
9                   2000.

10                  A. I think one has to know the programs  
11                  and has to know the marketplace and the reasons why  
12                  achievements are above or below targets before such  
13                  decisions are going to be made.

14                  Q. So at this point in time at least,  
15                  there hasn't been analysis done with respect to by 1994  
16                  if we are only 75 per cent of our targets for the year  
17                  2000, it's time to shift gears to put in new programs  
18                  or to perhaps trigger one of the response portfolios?

19                  A. That is a continuous affair. I don't  
20                  think you can say this will occur in '94 or '95 or '93.  
21                  That is the business of the company, is to examine the  
22                  success and shortfalls in different programs and  
23                  arrange responses to those shortfalls and its success.

24                  So I don't think it's realistic to say  
25                  there will be a date when people will go into a room

1 and decide what to do about targets or programs. That  
2 happens every day.

3 Q. I may come back to that later but I  
4 will leave that for now.

5 Mr. Shalaby, staying with you, in your  
6 direct evidence in this panel you described how Hydro  
7 looks at various risks that it faces in its utility  
8 planning and that some risks you look at in an  
9 analytical way and some risks you have to use judgment  
10 as opposed to analysis. Do you recall that testimony?

11 A. Yes, I do.

12 Q. And back in Panel 2 I had a  
13 discussion with Mr. Taborek and we were discussing ways  
14 of looking at uncertainties looking at the load  
15 forecast and uncertainties in demand management, and at  
16 that time I put to him an example where Hydro should  
17 combine or analyze looking at the uncertainty of demand  
18 management and the uncertainty associated with load  
19 forecast, and his evidence, in essence, was that  
20 because demand management targets were so small in  
21 comparison to the larger total load of the Hydro  
22 system, then you could couldn't really combine those  
23 uncertainties in that way.

24 [10:26 a.m.]

25 We can look through the transcript. I



1 don't know whether you remember that at all.

2 A. I don't remember it.

3 Q. I guess it would be Mr. Snelson on  
4 that panel, wouldn't it.

5 MR. SNELSON: A. I was on the panel. I  
6 would want to review the specific transcript reference.

7 Q. Perhaps we should take a look at  
8 that. It is in Volume 20, and it is page 3460. It is  
9 Volume 20, page 3460.

10 Part of the context of that discussion  
11 was -- we were talking about the F&D model, and line  
12 10, it reads:

13 "Now, I want to clarify one point, and  
14 this stems from the May 23rd hearing day.  
15 Mr. Taborek, you responded to a question  
16 from Mr. Watson about whether uncertainty  
17 in the demand-side management forecast,  
18 whether that was included in the F&D  
19 model, and I took your answer to be, it  
20 is included, but it doesn't have a big  
21 effect."

22 And the answer is, "Yes." And he goes on the next  
23 couple of pages to explain that.

24 And if we go to page 3462 at line 3 he  
25 provides the essence of his answer. At line 3 it

1 reads:

2 "And so the first thing, you had  
3 earlier asked me about big effects and  
4 small effects, and I said the load  
5 uncertainty is a big effect. Well, just  
6 logic would say that demand management  
7 uncertainty would be a small effect."

8 And down at line 19:

9 "...even if you made different  
10 assumptions, the effect was quite small.  
11 And, therefore, on balance, the  
12 assumption which we made was the most  
13 appropriate for the purpose."

14 Now, back when I had this discussion with  
15 Mr. Taborek your demand management targets totaled  
16 approximately 5,500 megawatts of savings by the year  
17 2014, and that in comparison to your total load, which  
18 is roughly 40,000 megawatts; is that correct, Mr.  
19 Snelson?

20 A. That is approximately correct, yes.

21 Q. So at that time when I had this  
22 discussion with Mr. Taborek that was about 15 per cent  
23 of your total load.

24 Now, today of course with the Update  
25 those demand management figures have been considerably



1 revised and they are just under 10,000 megawatts by the  
2 end of the planning horizon, which is approximately one  
3 quarter of your whole load.

4 Given the drastic increase in demand  
5 management would it now be appropriate to look at that  
6 uncertainty of demand management and load forecast and  
7 do that kind of analytical study at this time?

8 A. No.

9 Q. Why is that?

10 A. We have addressed the issue of the  
11 uncertainty in demand management and how that effects  
12 the uncertainty in the primary load forecast.

13 Q. Yes?

14 A. And there are some offsetting  
15 effects.

16 On the one hand, if load is higher then  
17 probably there will be more load to be managed, which  
18 will tend to increase the potential for energy  
19 efficiency improvements, and there may also be a higher  
20 avoided cost if we are being stressed and pushed into  
21 higher cost options, which will tend to increase the  
22 potential for demand management, too.

23 So to that extent the higher load may be  
24 associated with higher demand management, lower load  
25 may be associated with lower demand management, and

1 they may tend to offset some of the load forecasting  
2 uncertainty.

3 The view of the load forecasting people,  
4 and I believe they would probably have expressed it in  
5 Panel 4, is that the uncertainty bands on the primary  
6 load forecast are approximately the same as the  
7 uncertainty bands, uncertainty range around the basic  
8 load forecast in that the net effect is something of a  
9 wash.

10 Q. Although I think you would agree with  
11 me, Mr. Snelson, that compared to when I had that  
12 discussion with Mr. Taborek last May there is more  
13 uncertainty associated with the demand management  
14 targets. For example the mandation risk of 2,600  
15 megawatts, that wasn't present when I had this  
16 discussion with Mr. Taborek?

17 A. That is correct.

18 Q. So there is more uncertainty with  
19 demand management?

20 A. Yes.

21 Q. And that same --

22 MR. SHALABY: A. There are components in  
23 demand management that once implemented have very  
24 little uncertainty. An example of that would be  
25 standards.

1                   You have uncertainty until you know what  
2                   the standard is and when is it implemented, but if in  
3                   1994 we know that fridges are going to be this  
4                   efficient that really removes a lot of uncertainty  
5                   regarding the potential achievement of savings from  
6                   that measure.

7                   So again, all I am saying is that demand  
8                   management is a big -- many other things. Some  
9                   measures have a very large degree of certainty about  
10                  them, such as standards.

11                  Q. The topic of NUGs has been canvassed  
12                  thoroughly, but I had one further point of  
13                  clarification.

14                  Would you agree with me, Mr. Snelson,  
15                  that the future price of natural gas, that is really  
16                  the main determining factor of the maximum amount of  
17                  NUGs that you can expect to rely on for the system in  
18                  the context of the Update?

19                  MR. SNELSON: A. Certainly, the price of  
20                  natural gas is an important factor in NUGs, yes.

21                  Q. Could you tell me today what price of  
22                  natural gas, what increase in price would have to occur  
23                  to put a cap on the NUG program in terms of the  
24                  Update's response portfolio?

25                  A. I don't have that figure.

1 Q. Has that been done, that analysis?

2 A. The analysis that has been done, and  
3 I believe was discussed both in Panel 5 with respect to  
4 the NUG program and Panel 8 with respect to fossil  
5 options, is that with Ontario Hydro's forecast of  
6 natural gas prices, which is an increasing forecast of  
7 natural gas prices, then Mr. Brown on Panel 5 has  
8 discussed the economics of NUGs and how that is  
9 consistent with his forecast of non-utility generation.

10 I believe that in Panel 8 Mr. Smith  
11 discussed the actual natural gas price forecast itself  
12 and the uncertainties with respect to that, and my  
13 belief is that he indicated that if anything he would  
14 be lowering that forecast rather than raising it.

15 Q. So I take it, then, that that issue  
16 hasn't been revisited in light of the Update and the  
17 greater dependence, if you will, on the NUG option?

18 A. I think it is one of the things that  
19 we look at from time to time: what is our forecast of  
20 natural gas prices, how will that affect NUG potential?

21 Q. I wonder if I could refer you back  
22 panel to Volume 20 again, and this is page 3460, and  
23 once again this is the conversation with Mr. Taborek.

24 And on line 4 of page 3460 I asked the  
25 following question:

1 "Could you have treated demand-side  
2 management as uncertain, mathematically,  
3 in the model? That is, could demand  
4 management be expressed in a  
5 probabilistic form?"

6 And the answer is: "With some work, yes."

7 Now, if you could keep that answer in  
8 mind and turn to page 2 of Exhibit 687, and this is  
9 section 3 of the Update, it talks about demand  
10 management uncertainty, and I have underlined the very  
11 last line of the paragraph on uncertainty.

12 After describing the uncertainty and the  
13 reasons for it, you come to the conclusion, and the  
14 quote is:

15 At present, such uncertainties can be  
16 estimated only on a broad judgmental  
17 basis.

18 Now, Mr. Taborek said that you could do  
19 it in more of an analytical way in terms of a  
20 probabilistic type of analysis, and now it is only  
21 broad judgmental basis that can be implied. I wonder  
22 if you can tell me why that is.

23 MR. B. CAMPBELL: I'm sorry, I have had  
24 to give my copy of the transcript to the panel. Could  
25 you read me Mr. Taborek's answer, please? My



1 recollection is he did not speak to analysis; he just  
2 spoke to the fact that it could be expressed as a  
3 probabilistic function.

4 MR. RODGER: Yes, that's true. The  
5 question is:

6 "Could you have treated demand-side  
7 management as uncertain, mathematically,  
8 in the model? That is, could demand  
9 management be expressed in a  
10 probabilistic form?"

11 And the answer is: "With some work, yes."

12 Q. Maybe we could just clarify that.  
13 Would you agree, Mr. Shalaby, that treating something  
14 in a probabilistic form is more of an analytical  
15 approach to an issue as opposed to using broad  
16 judgmental decision-making?

17 MR. SHALABY: A. Yes, I agree.

18 Q. And what I am trying to compare is at  
19 that point in time of the transcript Mr. Taborek said  
20 that type of analytical approach could be done with  
21 respect to demand management uncertainty, and the  
22 conclusion now in the Update is that such than  
23 certainties can now only be done on a broad judgmental  
24 basis.

25 My question is: What has happened? Does

1 that mean that there is just that much more uncertainty  
2 with demand management now?

3 MR. SNELSON: A. Maybe I can take that,  
4 Mr. Rodger.

5 I don't see any inconsistency between the  
6 two statements. I believe that what Mr. Taborek was  
7 referring to was that mathematically in the model you  
8 could change the model so that it would accept  
9 probabilistic data for demand management and include  
10 that in the analysis, and I believe that was the intent  
11 of Mr. Taborek's statement and that is how I read the  
12 transcript.

13 Exhibit 452, I think, is suggesting that  
14 at the moment we don't have good ways of estimating the  
15 probabilities of achieving different levels of demand  
16 management.

17 So the way I see it is that 452 is saying  
18 we can't estimate or we don't have good ways of  
19 estimating the probabilities of achieving different  
20 levels of demand management.

21 Mr. Taborek is saying that with some work  
22 if you had those probabilities you could change the  
23 model to include them.

24 THE CHAIRMAN: Well, rather than working  
25 out and trying to reconcile whether they are consistent



1 or not, I suppose the question is: Can you do it or  
2 can't you do it?

3 MR. SNELSON: I think that the answer is  
4 that, as in 452, we don't believe that we have methods  
5 of putting probabilities on achieving different levels  
6 of demand management.

7 MR. RODGER: Q. And will that approach  
8 continue at least for the foreseeable future, the next  
9 few years?

10 MR. SNELSON: A. I believe it will  
11 continue for some time. I don't know how long it will  
12 continue.

13 MR. SHALABY: A. If you read back from  
14 the statement that you highlighted for us in page 2 of  
15 your exhibit, the statement you have highlighted was:  
16 At present, such uncertainties can be estimated only on  
17 a broad judgmental basis.

18 If you read back, I think what they were  
19 referring to such uncertainties include a large number  
20 of factors - it is about five lines above that: the  
21 field performance of measures now included is one  
22 factor; the role of new technologies; the selection of  
23 delivery approaches; the reaction of non-participants  
24 to incentive programs; the rate at which program  
25 delivery infrastructure can be built up; the expected

1 takeup rate in each market segment; and the permanence  
2 of customer behaviour.

3 So I think what Mr. Snelson is trying to  
4 convey to you, until we understand fully how these  
5 factors behave we cannot characterize them  
6 probabilistically. So the time needed is really to  
7 understand these factors that we are talking about  
8 here--

9 Q. And you would agree with me --

10 A. --sufficiently to make a meaningful  
11 probabilistic analysis reliable.

12 Q. And you would agree with me, Mr.  
13 Shalaby, that those factors which you have pointed out  
14 for us, they ultimately go to penetration rates and the  
15 excess of the demand management program?

16 A. They are the various components that  
17 make a program successful, yes, and understanding that  
18 will take time, a lot of observation, a lot of  
19 experimentation, and a lot of data collection.

20 Q. And you would agree, Mr. Shalaby,  
21 that unfortunately a lot of time is something that  
22 Hydro doesn't have in order to reach its targets, given  
23 the discussion back in the Demand Management Panel  
24 about Hydro trying to achieve the most ambitious  
25 program of consumption control on the continent by the

1 year 2000?

2 A. We indicated that our targets are  
3 ambitious and are going to be challenging, yes.

4 Q. Now, this morning again you confirmed  
5 for me, Mr. Snelson, that in some areas there is more  
6 risk associated with the Update than with the original  
7 DSP, and would you agree with me that because of the  
8 perhaps greater uncertainty this makes an adequate  
9 reserve margin even more important?

10 [10:40 a.m.]

11 MR. SNELSON: A. I think an adequate  
12 reserve margin was important before and it is important  
13 now.

14 Q. And I believe it was your direct  
15 evidence in this panel that Hydro has made the decision  
16 not to increase its reserve margin at all.

17 A. We are still planning on 24 per cent  
18 reserve, yes.

19 Q. At what point does increased  
20 uncertainty in your planning environment, at what point  
21 does that trigger Hydro to raise the reserve margin?

22 A. Well, if we were to be doing our  
23 reliability analysis in reviewing those results, we  
24 came to the conclusion that we needed to increase  
25 reserve margin we would do so. As I said in my direct

1 evidence, we have reviewed the reliability calculations  
2 for the Update Plan and that the 24 per cent reserve is  
3 still adequate.

4 Q. I would like to turn now to a few  
5 questions on the issue of fuel switching. At this time  
6 what is Ontario Hydro's understanding of how the fuel  
7 switching program will be funded, and by that I mean in  
8 terms of inducements and the capital costs associated  
9 implementing the fuel switching program.

10 MR. SHALABY: A. To my knowledge, there  
11 hasn't been specific details worked out on such an  
12 issue. The legislation is still, the last I heard was  
13 in third reading. Whether it passed or not I don't  
14 know.

15 THE CHAIRMAN: I'm sorry, I didn't hear  
16 that.

17 MR. SHALABY: The legislation enabling  
18 fuel switching, the last I heard was it's still in  
19 second or third reading. So I don't know whether the  
20 legislation has passed. And once it has, putting the  
21 terms of that in operational fashion will take some  
22 work.

23 MR. RODGER: Q. Although am I correct,  
24 Mr. Shalaby, that while the details may not have been  
25 worked out, Hydro at least expects to be able to

1 provide inducements to customers to fuel switch; is  
2 that true.

3 MR. SHALABY: A. Yes.

4 Q. But you are not aware of any range of  
5 inducements at this time?

6 A. The inducements range from  
7 information to customer service response to customer  
8 inquiries, to financial inducements. There is a wide  
9 range of mechanisms to induce customers to fuel switch.

10 Q. And of the range of financial  
11 inducements, has that been...

12 A. That is possible, but I am not aware  
13 that decisions have been made on what sectors would be  
14 dealt with in what fashion.

15 Q. Mr. Shalaby, in the event that the  
16 range of financial inducements has been arrived at at  
17 this date, could you provide those to us, please?

18 A. In the event there is anything nailed  
19 down specific, I can provide it to you, yes.

20 MR. RODGER: Could I get an undertaking  
21 number, please.

22 THE REGISTRAR: 684.14.

23 ---UNDERTAKING NO. 684.14: Ontario Hydro undertakes to  
24 provide financial inducements and  
25 publicly-available reports re fuel  
switching.



1 MR. RODGER: Q. I assume that by this  
2 time, Hydro and government have met to discuss this  
3 issue of fuel switching and how it will be implemented  
4 and so forth.

5 MR. SHALABY: A. By what time?

6 Q. By this time.

7 A. I'm not aware exactly who's meeting  
8 with whom, but it's a safe assumption that government  
9 and Hydro talk to each other on such matters, yes.

10 Q. Has there been any reports being  
11 exchanged back and forth between the government and  
12 Ontario Hydro with respect to fuel switching in terms  
13 of the mechanics of how it might be implemented?

14 A. Again, I am not close enough to the  
15 energy management function to be able to answer that in  
16 detail.

17 Q. Perhaps we could make it part of the  
18 same undertaking, if there is such reports that could  
19 be made available to the public, if you could provide  
20 those to us as well.

21 A. If there are publicly-available  
22 reports we will make them available to you, yes.

23 Q. Would you agree with me, Mr. Shalaby,  
24 that after the legislation is passed with respect to  
25 fuel switching, and if Ontario Hydro does offer

1 function incentives for fuel switching, then those  
2 incentives will be funded, as it were, through the  
3 general revenue and through rates, electricity rates?

4 DR. LONG: A. The general approach for  
5 dealing with demand management incentives is to borrow  
6 for the incentives and then to amortize them through  
7 the rates over the benefit period.

8 Q. And you will agree with me, and this  
9 was raised back in the demand management panel, that  
10 with respect to demand management programs, it's the  
11 participants who benefit from them and it's the  
12 non-participants who pay for those programs; would you  
13 agree with that, Dr. Long?

14 THE CHAIRMAN: I think that was the kind  
15 of question that was asked frequently in Panel 4.

16 MR. RODGER: I want to make sure that it  
17 is still correct, Mr. Chairman.

18 THE CHAIRMAN: I am not sure it was  
19 accepted in those terms in Panel 4.

20 MR. RODGER: Perhaps we could just check  
21 to be safe. I wouldn't want to mislead anybody.

22 Q. Volume 61, at page 10925, line 8, it  
23 was a similar question that I put to Ms. Fraser. Line  
24 8, the question reads:

25 "Would you agree with me, Ms. Fraser,



1                   that in these demand management programs,  
2                   the participants benefit from them, and  
3                   it's the non-participants that pay for  
4                   them?"

5                   And the answer is:

6                   "That's how it works, yes."

7                   THE CHAIRMAN: If you got that answer, if  
8                   I were you I would stick with it. You may not be  
9                   satisfied with what you get if you ask it again.

10                  [Laughter]

11                  DR. LONG: I certainly wouldn't have said  
12                  it that way. [Laughter]

13                  MR. RODGER: Well, as long as Ms.  
14                  Fraser's answer still stands, we can move on.

15                  MR. B. CAMPBELL: We rely on Dr. Long's  
16                  financial expertise, mind you.

17                  MR. RODGER: Q. And you will also agree,  
18                  and we have heard this before, that at least in the  
19                  short-term demand management programs are going to  
20                  result in higher electricity rates?

21                  DR. LONG: A. I indicated that in my  
22                  direct evidence, yes.

23                  Q. And I want you to consider a scenario  
24                  to provide the context for a question I want to ask you  
25                  regarding goals associated with fuel switching. Maybe

1 I should back up.

2 Two of the key goals that I see after  
3 reviewing the testimony is that certainly the  
4 participants are going to benefit, they are going to be  
5 better off because they are going to use energy more  
6 efficiently, and there is also a second broader  
7 societal benefit, if individuals consume electricity  
8 more wisely or energy more wisely then we are all going  
9 to be better off; is that fair?

10 MR. SHALABY: A. That's fair.

11 Q. And so I want to put the scenario to  
12 you, and this also ties in with Dr. Tennyson's  
13 testimony regarding inequitable costs and benefits  
14 associated with certain demand management programs,  
15 that that might be a concern.

16 In the first scenario we have an Ontario  
17 industry and that industry's final product is caustic  
18 soda, and the raw materials for this product are  
19 basically salt and electricity. The process to get  
20 this final product of caustic soda, it's an extremely  
21 electrically-intensive process. It's about 65 per cent  
22 electricity and the remainder is the salt. This  
23 company is very concerned about its use of electricity  
24 and wants to ensure that it is using electricity  
25 wisely, so it asks Ontario Hydro to come in and do an

1 energy audit. The results of the audit come in and  
2 Hydro says, "We have gone through your plant and yes  
3 you use electricity very intensively, but you are also  
4 using it very efficiently, and we can't provide you  
5 with any advice on how to use any demand management  
6 programs. You are already an efficient operation."

7 So that is the first part of the  
8 scenario.

9 In the second scenario, we have the  
10 integrated resource planning going on before the  
11 Ontario Energy Board with respect to natural gas. And  
12 again a theme in that debate is that it is better for  
13 individual gas consumers to use gas more efficiency and  
14 there will also be this broader societal benefit.

15 Let's say you have another Ontario  
16 industry, that is a mining and milling operation, it is  
17 a very large consumer of natural gas, again they ask  
18 the gas companies to come in and do an audit and the  
19 same thing, same result occurs. "You're a heavy  
20 consumer of gas but you use gas very efficiently and  
21 there is no room to fuel switch."

22 Now, Dr. Tennyson, aren't these  
23 situations, these scenarios that I described, aren't  
24 they examples where industry loses in both cases  
25 because in both cases industry can't take advantage of

1 the demand management programs because they are already  
2 efficient, but in both cases industry pays for the  
3 demand management programs through higher rates?

4 MR. B. CAMPBELL: Just a minute. I want  
5 to be sure I understand of the premise of the question.

6 You are not talking about industry  
7 generally, you are talking about these particular  
8 applications and these particular plants?

9 MR. RODGER: That's correct.

10 MR. B. CAMPBELL: Fine, thank you.

11 MR. RODGER: They may apply to more  
12 plants or they may not, but for this specific scenario.

13 DR. TENNYSON: I find the question  
14 difficult pretty difficult to answer but I will give it  
15 a try.

16 I think if these industries, the  
17 particular one you are talking about are already very  
18 efficient as you hypothesize, then I don't know what  
19 benefit it is to them to do the switching let's say. I  
20 mean, in terms of the fact that they are operating that  
21 way, in terms of the fact that obviously they are a  
22 competitive industry, so that they have already got an  
23 advantage, or it's perceived that way.

24 Q. Let me just clarify. I understood  
25 from earlier Hydro evidence that the fuel switching

1 potential for industry is zero; is that right.

2 MR. SHALABY: A. That's what Exhibit 257  
3 shows, yes.

4 Q. So in that case, Dr. Tennyson,  
5 staying with you, when industries are still efficient,  
6 isn't it true that the only thing they can look forward  
7 to with respect to demand management programs is higher  
8 rates, if they can't benefit, if they can't be a  
9 participant?

10 MR. B. CAMPBELL: You are talking about  
11 the fuel switching portion of demand management.

12 MR. RODGER: Well, it works both ways.  
13 Demand management generally and the fuel switching  
14 portion.

15 MR. B. CAMPBELL: But the demand  
16 management portion, Mr. Chairman, is clearly the  
17 potential for demand management energy savings  
18 generally was not estimated at zero. I thought my  
19 friend was simply talking about the potential that was  
20 anticipated for fuel switching.

21 MR. SHALABY: That's what my answer was  
22 related to, to fuel switching. I thought the question  
23 was clear.

24 MR. RODGER: Q. But there was a second  
25 part to the scenario and that was demand management



1 generally, that a company that is a very  
2 electrically-intensive, this was the caustic soda  
3 example, they get an energy audit done by Hydro for  
4 their electricity use and Hydro comes back with a  
5 report by saying, "We can't provide you with advice on  
6 demand management, you're already as efficient as  
7 practically you are going to be."

8 MR. SHALABY: A. There are two other  
9 areas they can benefit from, one is load shifting, and  
10 the other one is discount demand service.

11 Typically very large consumers of  
12 electricity, industrial consumers, have contracts for  
13 interruptible or discount demand service. And they  
14 also, if they are that intensive and work around the  
15 clock, they have potential for load shifting and taking  
16 advantage of lower rates at nighttime

17 Q. Let me extend the scenario that in  
18 fact this company also did the maximum amount of load  
19 shifting that they could do and they had those DDS  
20 contracts in place. Would you agree then that the only  
21 thing that industry can look forward in the context of  
22 the demand management programs is higher rates?

23 A. If they have achieved the maximum  
24 discount demand usage and load shifting and efficiency,  
25 they have got to be a world class industry I think and



1 they should absorb a little bit of rate hikes at that  
2 time, yes.

3 Q. They should?

4 A. They should be able to absorb it.

5 Now, the other thing that I think makes  
6 your scenario in my mind hypothetical is that we just  
7 finished saying that the industrial sector in 1991 took  
8 more advantage of Hydro incentives than any other  
9 sector.

10 So the scenario of one particular  
11 industry unable to participate in anything at all while  
12 the sector in general is doing much better than  
13 planned, appears to be more hypothetical than real in  
14 my mind.

15 Q. Just to be clear about that earlier  
16 testimony, I understood Hydro to say that it doesn't  
17 happy that those kind of a savings will occur each and  
18 every year.

19 A. I said I don't know the answer to  
20 that. I didn't say I didn't anticipate it.

21 Q. Now, if panel, if you agree with me  
22 before I started this hypothetical that part of the  
23 advantage of demand management and fuel switching is  
24 that society generally will benefit, could you explain  
25 for my client why then society generally shouldn't pay

1 for these programs; in other words, shouldn't these  
2 incentives be coming from the Ministry of Energy or  
3 Minister of the Environment as opposed to just  
4 generally electricity ratepayers paying for it?  
5 [10:56 a.m.]

6 DR. LONG: A. I think one of the  
7 definite beneficiaries of the demand management program  
8 is going to the electricity customers in general. It  
9 is expected that the average bill, the overall revenue  
10 requirement for Ontario Hydro will eventually be lower  
11 through the use of demand management programs.

12 Q. And could you tell me --

13 A. While rates may go up - and as I  
14 mentioned in my direct, there is no guarantee that they  
15 will go down in the long term - there is an expectation  
16 that the average revenue requirement will decrease.

17 Q. Dr. Long --

18 A. So customers overall will benefit.

19 Q. Could you tell me, Dr. Long, or give  
20 some comfort to the member companies of AMPCO when they  
21 might see those rates starting to decline?

22 A. I didn't say that rates will decline.  
23 I said revenues, revenue requirements are expected to  
24 be lower on average.

25 Q. Over the long term?

1 A. Yes.

2 MS. HOWES: A. If I could add just one  
3 more potential societal benefit, if we are fuel  
4 switching and using natural gas more efficiently in  
5 applications, then I think our reserves or access to  
6 reserves of natural gas will be extended and society on  
7 a whole would benefit, and there may be more natural  
8 gas available in the longer term.

9 Q. Now, we have heard about Hydro  
10 offering incentives and some of the reasons for that.  
11 Could you tell me what is the role of the gas companies  
12 in terms of fuel switching and incentives?

13 MR. SHALABY: A. I don't know the answer  
14 to that.

15 Q. Has there been any discussion at this  
16 point between Ontario Hydro and the gas utilities with  
17 respect to the matter of fuel switching?

18 A. We indicated in Panel 4 that there  
19 has been -- that has been an issue identified, that  
20 working with the gas companies is an area that would  
21 enable fuel switching to be smoother.

22 But as I indicated earlier today, the  
23 details of fuel switching and who would pay for what  
24 and when has not been finalized. We have an  
25 undertaking if there is anything different than that.

1 MR. SNELSON: A. I can perhaps just add  
2 something to that from personal experience, and that is  
3 that the gas company is presently offering me an  
4 incentive to change my electric water heater to gas.  
5 They are offering free installation of a gas water  
6 heater and a one-year holiday on the rental of the gas  
7 water heater.

8 Q. So I take from that, Mr. Snelson,  
9 that fuel switching is potentially a very good thing  
10 for gas companies because it is going to open some new  
11 markets for them.

12 A. I am not familiar with the details of  
13 the gas company. I am just indicating the gas  
14 companies are already somewhat active in this area.

15 Q. Does Hydro see any potential problem  
16 or any perceived inequity with electricity ratepayers  
17 helping gas companies to attract new customers to their  
18 product?

19 MR. SHALABY: A. I think it depends on  
20 the extent of switching and the specific situation, but  
21 we indicated in Panel 4 that Hydro has dealt with the  
22 issue of the inequity in demand management, and Hydro  
23 accepted that there will be, potentially, inequity from  
24 one year to another, from one industry to another, and  
25 our way of dealing with it is to offer a large number

1 of programs to all the sectors in the economy to make  
2 sure that everybody has an opportunity to participate  
3 in demand management.

4 Now, at the end of the day, there may be  
5 winners and losers at the end of the day, but that is  
6 something that we have to accept in order to achieve  
7 the large targets in demand management. And we will  
8 try and minimize those inequities to the extent we can.

9 Q. Thank you. Now, there has been a lot  
10 of discussion in the past couple of days about  
11 emissions. I just have one final question of  
12 clarification.

13 On page 4 of my Exhibit 687 we have a  
14 figure C5, and this is taken from Exhibit 452, and it  
15 shows with the updated Plan around the year 2010 the  
16 fossil option exceeding the illustrative target limits  
17 for CO(2) emissions.

18 My simple question is: Why did Ontario  
19 Hydro put that option in the Plan where you know the  
20 targets are going to be exceeded by such large amounts?

21 MS. HOWES: A. Well, I think there are a  
22 couple of things you should be aware of. We used it as  
23 an illustrative target, and if you remember in my  
24 direct evidence it was based on maintaining our 1990  
25 levels, and that number is 25 teragrams.



1                   Now, you may be aware that there is an  
2                   upcoming conference in Rio to discuss global warming  
3                   issues generally. Sustainable development I guess is  
4                   the primary reason for this.

5                   There has been a fair amount of  
6                   discussion about the advisability of CO(2) targets.  
7                   There is considerable, I would use the word dissension  
8                   among countries as to the advisability of CO(2)  
9                   targets. I think that we may well see something  
10                  different coming out of Rio than a set CO(2) target  
11                  that every country is going to uphold.

12                 The reason that we put this in was for  
13                 completeness, to suggest that yes, we too at Ontario  
14                 Hydro are concerned about CO(2) levels. If indeed  
15                 there is a target accepted by the Canadian government  
16                 and the provincial government, then we will do our  
17                 damndest to meet it.

18                 But what we are saying with this  
19                 particular chart is our programs currently as planned  
20                 are adequate to meet CO(2) emissions; our problem is  
21                 beyond the year 2010.

22                 If things change in the interim, yes, we  
23                 would do something differently, and it may mean that  
24                 our choice of future supply options is quite different  
25                 because of more stringent targets. We just don't have



1 enough information now to make that decision.

2 Q. And certainly the potential is open  
3 then that if CO(2) limits at some point in time, the  
4 year 2010 or around that time, are very strict and  
5 Hydro cannot meet them, then that would or could  
6 perhaps eliminate that option?

7 A. It would certainly be a factor, and  
8 at this point we don't have enough information to make  
9 a choice at this time.

10 Q. Fair enough. Now, I said I had no  
11 further questions on NUGs, but I see there is one other  
12 point I would like to ask you about, and this stems  
13 from the increased emphasis on non-utility generation  
14 in the Update and the new targets.

15 I understood your direct evidence to be  
16 that the new NUG targets are approximately 1,600  
17 megawatts by the year 2000 and 3,600 megawatts by the  
18 year 2014, is that correct, as a rough estimate?

19 MR. SNELSON: A. No, the NUG targets  
20 have not been changed.

21 Q. All right. Can you tell me, Mr.  
22 Snelson, how much of those NUGs will be fully  
23 dispatchable at those times of 2000 and 2014? And by  
24 fully dispatchable I mean that Hydro is able to turn  
25 them on or off or increase or decrease output when

1 necessary.

2 A. No, I can't tell you that. You will  
3 recall from Panel 5 testimony that most of our NUG  
4 contracts to this point in time if they have any  
5 dispatchability it is very limited, and that one of the  
6 areas that we are trying to move our NUG program is  
7 into obtaining a greater degree of flexibility from  
8 non-utility generation, including more dispatchability.

9 Q. So the issue of whether a NUG will be  
10 dispatchable or not could become a very important  
11 consideration, but at this point in time those details  
12 haven't been worked out yet; is that fair?

13 A. That's correct.

14 Q. I would like to spend a little bit of  
15 time about the change in planning approach from  
16 planning to the upper to the new approach of planning  
17 around the median.

18 When we talk about the old approach of  
19 planning to the upper would a fair way to characterize  
20 that approach be that that was one way in which Hydro  
21 could bank approvals? By that I mean you don't use  
22 them unless you need them, and if you do need them they  
23 are there and they are available; is that fair?

24 A. Yes. We were seeking approvals that  
25 we would need on the timetable to meet the upper load

1 forecasting, and if the load were to fall median or  
2 lower then there would be some delay in implementing  
3 some of those approvals.

4 Q. And on page 5 of Exhibit 687 -- and  
5 this is again taken from Exhibit 452, and this was  
6 touched upon over the past couple of days, but I just  
7 want to make sure I understand it.

8 In the second paragraph I have underlined  
9 a sentence which talks about the planning to the upper  
10 approach, and it reads:

11 This approach provided flexibility to  
12 meet higher than forecast demands of  
13 electricity and accommodate other risks,  
14 both in terms of meeting standards for  
15 reliability of supply and meeting them in  
16 a reasonably economic manner.

17 Could you just identify for me, Mr.  
18 Snelson, what those other risks are that are  
19 accommodated by the planning to the upper approach?

20 A. They are some of the same risks that  
21 are identified in our response portfolio, risks such as  
22 less demand management than planned, those sorts of  
23 risks. Risks of higher environmental controls being  
24 required.

25 Q. So there is a range of risks then

1 that were mentioned there?

2 A. Yes.

3 Q. Now, in paragraph (b) of that same  
4 page when you talk about re-examining the approach and  
5 discussing one of the reasons why it was abandoned was  
6 because there was an increased risk that significant  
7 work and costs associated with the definition phase of  
8 major projects would be wasted.

9 Over on page 6, which is page 21 of  
10 Exhibit 452 --

11 MR. SHALABY: A. That was not the reason  
12 it was abandoned. The words start with "moreover".  
13 That was yet an added --

14 Q. Another reason, another factor?

15 A. But the main reason was above that.  
16 This was yet another supporting factor.

17 Q. All right. On page 6, which is page  
18 21 of Exhibit 452, just a little less than halfway down  
19 the page, Hydro states:

20 It is estimated that the penalty for  
21 overplanning would be in the order of  
22 several hundred million dollars.

23 And you discussed with Mr. Mark the cost/benefit  
24 analysis.

25 Would you agree with me that the decision

1 to adopt the planning around the median approach, that  
2 also has cost implications for Ontario Hydro?

3 MR. SNELSON: A. Yes.

4 Q. And as one example, I take it that up  
5 unto the point in time when Hydro abandoned that  
6 approach last fall that Hydro was continuing to  
7 prepare, as it had done so for many years before,  
8 continued to prepare for the approvals for major new  
9 supply. And that work, what will happen with that work  
10 and those moneys that were expended on the preparation  
11 for those kinds of approvals?

12 A. I believe that the largest  
13 expenditure on approvals for major supply was the  
14 definition phase work for CANDU "A", and that was  
15 cancelled in November, 1990 as a result of a specific  
16 government direction with respect to the nuclear  
17 moratorium.

18 Q. I was going to come to it later, but  
19 perhaps we could refer to it now. It is not in my  
20 package, but it is Appendix A of Exhibit 452, and  
21 Appendix A is the Demand/Supply Plan chronology, and it  
22 basically charts the stages which the Hydro planning  
23 process has gone through since 1984.

24 My question is, Mr. Snelson: When you  
25 are looking at the costs of preparing for the approvals



1 for major new supply, don't you also have to include  
2 the costs, or some of the costs, that were incurred way  
3 back right from 1984 onward to truly and fairly capture  
4 all the costs?

5 A. No, I think that a large part of  
6 those costs are the general costs of conducting a  
7 planning activity within the corporation and not  
8 necessarily associated with any particular option.

9 Q. All right. I want to leave that  
10 answer for now, but I will come back to it.

11 Now, as well as having past costs  
12 involved in the seeking of approvals for major new  
13 supply, the adoption of the planning around the median,  
14 that will also have future cost implications for Hydro,  
15 won't it.

16 A. Yes.

17 Q. And you have said in your direct  
18 evidence that planning around the median, that tends to  
19 be associated with reliance on fairly frequent  
20 decision-making. Every three years or so I believe was  
21 the figure you gave in the Update.

22 As a matter of fact, if you stay with  
23 page 6 of my exhibit at the very top paragraph it  
24 reads:

25 In contrast, planning around the



1 median tends to be associated with  
2 reliance on relatively frequent  
3 decisions, every three years, on  
4 relatively small supply adjustments in  
5 terms of megawatts, reflecting a  
6 regularly updated, long-term outlook.

7 MR. B. CAMPBELL: Except that when you  
8 read that you didn't say "for example, every three  
9 years", "e.g."

10 MR. RODGER: Q. Is that incorrect?  
11 Would it be a longer period of time, or is three years  
12 fair?

13 MR. SNELSON: A. I think that our point  
14 here is that we would like to have a more flexible  
15 process of reviewing planning decisions that allowed  
16 decisions to be made at times that were appropriate  
17 from a planning perspective, more appropriate.

18 Q. And certainly we have also heard this  
19 panel reiterate earlier testimony that Hydro  
20 anticipates that there will continue to be tougher and  
21 more stricter environmental regulations as we proceed  
22 in the future; is that correct?

23 A. Yes.

24 Q. So not only will there be more public  
25 reviews but those public reviews will be stricter in

1 terms of the environmental regulations that provide the  
2 context for those more frequent hearings?

3 MS. HOWES: A. That could be true, but I  
4 am not sure how it would affect the hearing. I mean, I  
5 would say that there is an environmental component of  
6 this particular hearing and it reflects the  
7 stringencies of the environmental regulations of the  
8 province today.

9 Q. Well, when we talk about planning  
10 around the median also has a future cost for Hydro,  
11 would you agree with me that one consequence of  
12 adopting the planning around the median approach is  
13 that it makes approvals for major new supply a lot more  
14 expensive tomorrow as compared with getting those  
15 approvals today at this hearing, given that all this  
16 work has been done over the many years and given that  
17 we are all here going through this process now?

18 MR. SNELSON: A. No, I wouldn't  
19 necessarily agree with that.

20 Q. Will it be less expensive to seek  
21 approvals for major new supply in the future relative  
22 to this hearing?

23 A. I think that the best way to get  
24 approvals is to be able to seek them when there is a  
25 clearly identified need, where you have a high

1 probability of being able to obtain those approvals,  
2 when there is a clear need identified. There isn't a  
3 clear need identified at the moment.

4 [11:15 a.m.]

5 MS. HOWES: A. If I could add something  
6 to this particular point.

7 In a hypothetical situation, if indeed  
8 there was an approval received today but there was a  
9 significant environmental regulation that changed,  
10 there may well be the need to have another hearing  
11 process to revisit the earlier approvals. So you may  
12 not be saving in the long-term by getting an approval  
13 now, you may have to revisit that particular approval.

14 Q. I want to come back to that, but let  
15 me follow up with Mr. Snelson's point.

16 Do I understand that be it in two years  
17 or three years or four years, if you have to come back  
18 and you decide you do need an approval for new major  
19 supply, are you going to have to start that preparation  
20 work from scratch again or can you incorporate some of  
21 the earlier work that's been done since 1984 in that  
22 new request for approval?

23 MR. SNELSON: A. Well, coming back to  
24 the three years, we are seeking approvals here for all  
25 the approvals that we believe we need within the next

1 five years.

2 So the concern here is that there could  
3 be changes in the planning environment, just as there  
4 have been changes between '89 and '92, there could be  
5 changes beyond now that are not currently foreseen, and  
6 we couldn't ask for approvals now based on things that  
7 are not foreseen now.

8 So we do recognize the need for more  
9 frequent review but we are seeking approvals in this  
10 process for things that we can adequately foresee that  
11 we need within the next five years.

12 Coming back to the specific of your  
13 question which was, I believe, whether much of the work  
14 that has been incorporated in this hearing, if there  
15 was to be another review within a relatively short  
16 period of time, whether that could be reused, and I  
17 think that's inherent in kind of a more frequent review  
18 process, is that we would see if there were a more  
19 frequent review process of it being more of an  
20 incremental nature building of previous decisions and  
21 previous information.

22 Q. So I can give me client comfort that  
23 the work and money spent from 1984 to the fall of 1991,  
24 that's not just going to be written off by Ontario  
25 Hydro, but that work will form the foundation or could

1 form the foundation for subsequent hearings, subsequent  
2 approvals?

3 A. It could form the foundation for some  
4 subsequent process as you have indicated.

5 Q. Was that reflected in the analysis in  
6 452D, this was the cost of overplanning and  
7 underplanning. Let me just refer to that. On page 2  
8 of that, which is Case A, it shows the approximate  
9 approval costs to 1997 are about \$200 million.

10 A. We don't believe that that included  
11 any costs for plan approval. Those were costs for  
12 project definition phase and project approval.

13 Q. So in terms of perhaps giving a more  
14 fair evaluation of the costs associated with each  
15 approach, the planning to the upper approach, or  
16 planning around the median approach should also  
17 consider the money that's been spent in the past which  
18 may be used in the future?

19 MR. B. CAMPBELL: I think, Mr. Chairman,  
20 the witness has already been asked that question and he  
21 said no he didn't consider that appropriate. It was  
22 applicable to all options in the planning activities  
23 generally. I think the question has been specifically  
24 asked and answered.

25 MR. RODGER: Q. Sorry, I want to be



1 clear. Is the panel is saying that it couldn't  
2 separate out the costs incurred from 1994 to the fall  
3 of '91 as going to the major supply approvals, that  
4 can't be done, that's all one big mix and it all goes  
5 into the hopper and it can't be separated?

6 MR. SNELSON: A. That's the cost of  
7 preparing a demand/supply plan and our demand/supply  
8 planning, and it is part of our overall planning  
9 activity.

10 Q. Mr. Snelson, if I could stay with  
11 you, I wanted to clarify one point that came up in your  
12 direct testimony regarding the no-approvals scenario.  
13 Do I understand that if this Board were to give you no  
14 approvals, then the planning around the median approach  
15 would not be the best one, and the result would be that  
16 Hydro would probably be back seeking approvals for new  
17 major supply; is that your evidence?

18 A. Yes.

19 Q. Now, isn't it the case that since you  
20 have now abandoned your approvals for major new supply,  
21 that puts Ontario Hydro in a very, very difficult  
22 position should that Board find that you do not get the  
23 approvals? Aren't you really on the edge of the cliff  
24 and you have to get things moving very quickly to start  
25 your applications all over again?



1 A. We would have restricted flexibility.

2 Q. And would you consider that approach  
3 to be prudent long-term planning?

4 A. As I have said, we are relying upon  
5 getting the approvals that we are seeking.

6 Q. Aren't you concerned that might be  
7 seen as previous prejudging the Board's decision?

8 MR. B. CAMPBELL: Mr. Chairman, I think  
9 this is going a bit far.

10 Any applicant who comes before you comes  
11 before you with a case that it expects to make. We  
12 don't come here before you in the full expectation that  
13 we will be unable to make the case we are making. That  
14 is the basis of any application. And to put it in the  
15 characterization of prejudging the outcome of the  
16 hearing means that if that was improper then no  
17 application for anything would ever be made.

18 I think in terms of what my friend is  
19 pursuing, in terms of what specific actions would be  
20 taken when, Mr. Snelson has answered those questions  
21 fully. But I think the last question is simply  
22 improper.

23 MR. RODGER: I think what makes this  
24 hearing different, Mr. Chairman, is that this hearing  
25 is about the future reliability of electricity supply,

1 and my client takes the position that electricity,  
2 reliable electricity supply is an essential service,  
3 and that you just have to be extremely careful in your  
4 planning and the plan you put forth, and that the  
5 current one may not be the most flexible or the most  
6 prudent course.

7 THE CHAIRMAN: That may be, but isn't  
8 that an argument that will be made at an appropriate  
9 time?

10 The proponent has, amongst its scenarios,  
11 has contemplated that the situation that no approvals  
12 be given. There are some consequences of that  
13 obviously they have to recognize. Whether those risks  
14 are properly measured, will be something that I guess  
15 we will all have to think about.

16 MR. RODGER: Q. Now, Mr. Snelson, you  
17 agreed with me at the outset that with respect to new  
18 major supply, that it wasn't really a question of if  
19 that supply will be needed, it's a timing question,  
20 it's a question of when.

21 MR. SNELSON: A. I said in most cases.

22 Q. And you, I believe it was you, in  
23 your direct evidence said that again part of the reason  
24 why you are no longer seeking such approvals is that  
25 those approvals might become stale or somehow void over

1 the passage of time, that approvals have shelf lives  
2 associated them; is that fair?

3 A. That is correct.

4 Q. One thing that I didn't get from your  
5 evidence, you didn't say what the shelf life was for an  
6 approval for new major supply. Could you tell me that,  
7 please?

8 A. I think it is something that's rather  
9 hard to define. The longer the period between  
10 obtaining the approval and trying to take action based  
11 upon that approval, the longer that intervening period,  
12 then the greater the likelihood that there will be some  
13 circumstance that wasn't anticipated at the time the  
14 approval was given that would give cause for people,  
15 for pressure to reopen the questions and have that  
16 re-examined.

17 Q. I can recall when Mr. Mark was  
18 discussing the situation of the five-year action plan,  
19 assuming we get a decision in 1994, that Hydro still  
20 wouldn't be seeking its new major supply approvals  
21 within that five-year time frame. Does that mean that  
22 shelf life of an approval could be as short as 12  
23 months, if Hydro isn't even going to be asking for the  
24 that approval within that time frame?

25 A. I don't understand the 12 months.

1                   Q. If we get a decision in 1994, that  
2 brings us within the five-year window, the five-year  
3 action plan for the new major supply requirements under  
4 median load growth under the Update. I believe it was  
5 Mr. Dalziel stated that although technically the  
6 request for approvals is within that time of five-year  
7 time frame, or the five-year action plan, that Hydro  
8 still may not be seeking approval for it. And if we  
9 are talking about of a matter of a year or so when  
10 Hydro might be coming back and asking for that  
11 approval, is as short a period as that time of one year  
12 or two years that the approvals could expire?

13                  A. I think that in that circumstance  
14 that you are describing, the hearing ends in '94 and we  
15 obtain certain approvals, and we have said that we  
16 would seek approvals that we would need within five  
17 years at the end of the hearing which takes to you  
18 sometime in '99, then in a very rough way there is a  
19 judgment there that the shelf life of an approval is  
20 about five years. But I don't think that that's  
21 something that is clear defined. We had to select a  
22 number, as I said to Mr. Mark, we had to select a  
23 number of how far out we would seek approvals, and our  
24 judgment was that five years was about the right time.

25                  Q. So shelf lives are about five years?

1                   A. I couldn't say that. I have said  
2     that the longer the intervening period, the greater the  
3     likelihood that the issues will need to be examined.

4                   Q. So, in essence, there has been no  
5     number affixed to it; that's fair?

6                   A. I think this is something that will  
7     come about through experience as approvals are given  
8     and one tries to exercise them at a later date.

9                   Q. And no defined shelf life at this  
10    point in time?

11                  A. I don't believe there is a defined  
12    shelf life at this point in time.

13                  MR. RODGER: Mr. Chairman, I am starting  
14    a new section, if you would like to take the morning  
15    break.

16                  THE CHAIRMAN: Yes, that will be fine.  
17    Fifteen minutes.

18                  THE REGISTRAR: Please come to order.  
19    This hearing will take a 15-minute recess.

20    ---Recess at 11:30 a.m.

21    ---On resuming at 11:50 a.m.

22                  THE REGISTRAR: Please come to order.  
23    This hearing is again in session. Please be seated.

24                  THE CHAIRMAN: Mr. Rodger?

25                  MR. RODGER: Thank you, Mr. Chairman.



1 Q. Panel, I would now like to turn to  
2 the issue of Hydro's contingency plans and its general  
3 risk analysis. I have one question with respect to the  
4 Manitoba Purchase.

5 During that panel I had a discussion with  
6 Mr. Huggins, and it was based on some of his earlier  
7 testimony, and the thrust of my question was that if  
8 you didn't get the 1,000 megawatt purchase, that  
9 Ontario Hydro didn't have a contingency plan in place  
10 to replace that lost power. That's in Volume 105, page  
11 18571.

12 MR. SNELSON: A. The page number was?

13 Q. 18571.

14 ---Off the record.

15 MR. RODGER: Q. What I did is on page  
16 18570 I reviewed some earlier transcript and then on  
17 page 18571, line 5, I asked the question:

18 Do I take that response to mean that  
19 if the 1,000 megawatt purchase is lost,  
20 as it stands today, Hydro does not have a  
21 defined contingency plan about what it  
22 would do to replace it?

23 And the answer: That is correct.

24 I am wondering if you could tell me  
25 today, panel, has that situation changed? Does Ontario

1 Hydro now have a contingency plan which is contemplated  
2 to replace that purchase if it indeed is not approved  
3 or is otherwise lost?

4 MR. SNELSON: A. I think in the analysis  
5 of what you have shown in the no approvals case and the  
6 evaluation of the Manitoba transmission, the Manitoba  
7 Purchase, we have discussed ways in which the Manitoba  
8 Purchase might be replaced, but we haven't defined a  
9 specific contingency plan that if the purchase is  
10 cancelled we definitely will do this.

11 Q. Just so I understand the options from  
12 before the break, would I be correct to say that one of  
13 the options would be, is to make application for  
14 approval for new major supply; is that one option?

15 A. That is one option, yes.

16 Q. What would the other options be that  
17 are available to Ontario Hydro?

18 A. They are described in the  
19 no-approvals case, for instance.

20 Q. I take it the no-approvals case would  
21 again mean that you are back here seeking approvals,  
22 seeking further approvals?

23 A. No.

24 Q. So the options then to replace that  
25 lost 1,000 megawatts would be made up by what?

1 MR. DALZIEL: A. I am looking at Exhibit  
2 646 under attachment E.

3 Q. Yes?

4 A. Page E2-4. That page is titled Table  
5 A1, Load and Capacity Table, under median load growth.

6 Now, this case has excluded the Manitoba  
7 Purchase. It has also excluded the hydraulic option.  
8 But if we look out to the year 2006, those dates are  
9 across the top, and then if we come down until we see  
10 that figure that stands alone, the 672.

11 Q. Yes?

12 A. That corresponds to the addition of a  
13 first major supply option. That's the year 2006.

14 Q. And certainly that would require  
15 additional approvals to what you are seeking at this  
16 hearing in order to implement that.

17 A. For that time, yes.

18 Q. And am I correct, Mr. Dalziel, that  
19 the other options below that line that you have pointed  
20 out, the new nuclear, I guess mainly it's new nuclear  
21 and gas turbines, all those other options, they would  
22 also require additional approvals to what Hydro seeks  
23 at this hearing?

24 A. That's correct.

25 MR. SNELSON: A. That's correct, Mr.

1 Rodger, but not within the five years, the five-year  
2 action plan that we are looking at up until 1999.

3 Q. Can you confirm that that is the case  
4 or is that five-year period, is it flexible? It could  
5 be before then, it could be after then.

6 I thought at this point in time the dates  
7 weren't defined as exact as that.

8 MR. DALZIEL: A. I think I indicated  
9 earlier, to meet the in-service dates indicated on that  
10 table, if we take the earliest one first, I mentioned  
11 2006, that is a CTU facility as indicated on the table.  
12 Clearly we don't need to start approval for that  
13 facility within the next five years for a 2006  
14 in-service date.

15 Coming down, as you pointed out, and  
16 there is a CANDU 6 option, shown as being in-service  
17 for the year 2010, and we indicated earlier that  
18 approval for that facility would be 1999.

19 Q. I guess my question, Mr. Dalziel, is  
20 I understood that the Manitoba Purchase started to come  
21 on stream in around the year 2000; isn't that right,  
22 the first 200 megawatt block or 250 megawatt block?  
23 Isn't it around that time frame?

24 [12:00 p.m.]

25 A. It is around that time frame, yes.

1 Q. So if the deal is lost how else do  
2 you make up that 250 megawatts in the year 2000, 2001,  
3 2002 until the 1,000 megawatts is achieved? What  
4 options do you put in place?

5 A. I believe in describing these cases  
6 in my direct evidence there could be a greater reliance  
7 on non-utility generation and also a greater reliance  
8 on the existing system. The existing system could work  
9 harder in those years.

10 Q. And other than that description is  
11 there anywhere I can look to to see how that is  
12 formulated and see the particulars of that plan?

13 A. Yes, it is --

14 THE CHAIRMAN: Well, if you can figure  
15 out A1 wouldn't you be able to find it?

16 MR. DALZIEL: That's correct.

17 THE CHAIRMAN: It would take some doing,  
18 but couldn't you work it out?

19 MR. DALZIEL: That is correct.

20 MR. RODGER: I think I will have to look  
21 at table A1 again, Mr. Chairman, another time.

22 THE CHAIRMAN: You need a magnifying  
23 glass.

24 MR. RODGER: Q. Now, Mr. Watson's last  
25 question this morning really cut me off at the knees



1 because I intended to spend a lot of time on the time  
2 schedule and the criteria involved in triggering the  
3 contingency plans of the response portfolio.

4 Do I understand your evidence that there  
5 is no series of triggers or criteria that we can look  
6 at to see when the response portfolio will start to be  
7 activated?

8 MR. SNELSON: A. I think Mr. Shalaby  
9 indicated correctly that it is part of the evolving  
10 planning process.

11 Q. I wonder if you could turn to page  
12 11, please, of my exhibit, 687. This was a slide that  
13 was used at an AMPCO seminar, and it was presented by  
14 Mr. Al Kupcis who I understand is the Vice-President of  
15 Procurement and Power System Planning at Ontario Hydro;  
16 is that correct?

17 A. Yes.

18 Q. And he was indicating to the  
19 membership the various percentiles and when the need  
20 dates would be. What I have done is I have added the  
21 vertical lines showing the need dates from the graph.

22 Mr. Snelson, even based on this graph if  
23 we took the 70th percentile could you then give me an  
24 idea of when the trigger date would be to activate the  
25 response portfolio?

1                   A. I'm sorry, I don't think I fully  
2 understand the question.

3                   Q. Well, from this chart of Mr. Kupcis  
4 it shows that even if you take the 60th percentile,  
5 just 10 per cent above the median growth, then your  
6 need date is 2004, and if Hydro in the next couple of  
7 years or the next period of time --

8                   THE CHAIRMAN: Wait a minute. Hold it.  
9 How do you get that, the 60th percentile?

10                  Oh, yes. All right. All right. I see  
11 it now.

12                  MR. SHALABY: The 60th corresponds to  
13 2007; 70th corresponds to 2004.

14                  MR. RODGER: Yes, you are right. I'm  
15 sorry.

16                  Q. If that was the case, if we had that  
17 kind of load growth, when would Hydro have to make the  
18 decision that it has to start putting some of its  
19 contingency options in place, remembering that in order  
20 for the contingency plan to work there must be enough  
21 time, the decision has to be made well enough in time  
22 where the option is going to be in-service, in place.

23                  Just based on that 60th percentile, when  
24 does that decision have to be made?

25                  MR. SNELSON: A. Are you assuming that

1 the load consistently follows that 60th percentile line  
2 from now until that time?

3 Q. Yes. And I am assuming that Hydro  
4 will be meeting its demand management targets.

5 A. I think I should bring to your  
6 attention that we do have some difficulties with the  
7 details of this figure in that it appears to be on a  
8 slightly different basis to the figure that Mr. Dalziel  
9 showed in his direct evidence that was describing the  
10 percentage confidence that the options would cover the  
11 load.

12 THE CHAIRMAN: Do you have the reference  
13 to that figure? I remember it, but I don't remember  
14 the number.

15 MR. DALZIEL: The figure that tells a  
16 similar story is page 25 of Exhibit 646.

17 THE CHAIRMAN: All right.

18 MR. RODGER: Q. Sorry, what page was  
19 that again?

20 MR. DALZIEL: A. Page 25. And I think  
21 we can speak to the generalities concerning your  
22 figure.

23 What Mr. Snelson is referring to as to  
24 the details is that our understanding of your page No.  
25 11 is that the supply line that is indicated there is

1 being compared against primary load forecasts, and in  
2 terms of actually identifying need dates we would  
3 really want to compare that against firm load forecast.

4 So some of the dates at the bottom there  
5 would shift a bit. We could see that if we examined  
6 page 25 of 646, but notwithstanding those differences I  
7 think we can still speak to the questions you want to  
8 ask.

9 Q. So my question is with respect to the  
10 load growth. I take it from your answers that there  
11 just isn't even a range of dates at this point in time  
12 when Hydro has to make a decision to get this  
13 contingency plan in place?

14 MR. SNELSON: A. It would depend how  
15 things evolve, but your question was if the load  
16 follows that 60th percentile line when would we have to  
17 start making decisions.

18 Well, there would be some point in time  
19 at which one would recognize that the load was higher  
20 than forecast and start to take action on that. That  
21 would probably be over a number of years.

22 But even that shows a need of say around  
23 2007 and I believe with Mr. Dalziel's adjustments it  
24 probably pushes that out to 2008 or so, so it is only a  
25 year or two in advance of our current plans.

1 Q. Now, the same theme but with a  
2 different component of the plan. What about with  
3 respect to demand management?

4 Just one example. Hypothesize that the  
5 mandation risk comes to be reality and you are going to  
6 be 2,600 megawatts short of your target by the end of  
7 the planning horizon. If that came about, then what  
8 would your trigger dates be?

9 A. I don't believe we are at risk to the  
10 full amount of that mandation amount. That is the  
11 amount which I believe we are relying upon some element  
12 of mandation in the programs.

13 But if, for instance, standards are not  
14 implemented, then I would expect that we would go with  
15 programs instead, and the risk is that while the  
16 standards should achieve 100 per cent penetration,  
17 presuming they are enforced, then a program might  
18 achieve a lesser percentage for penetration. So we are  
19 at risk for some proportion of that.

20 Q. And what about demand management  
21 programs generally, then? Let's say in the year 2000  
22 it turns out that you only achieve a quarter or perhaps  
23 a third of your target. If you are forecasting back  
24 when do you have to make the decision that it is likely  
25 you are not going to reach your target?



1                   A. I think that it would be very clear.  
2       If we were only going to achieve a third or a quarter  
3       of our target for demand management in the year 2000, I  
4       think we would have some very clear indications that we  
5       were underachieving in our program probably as early as  
6       '95, or earlier.

7                   Q. So it is within the next three years  
8       then that if that were to come about that a decision  
9       would have to be made about what contingency plan would  
10      be in place?

11                  A. It would be an evolving process of  
12      revising estimates and revising plans.

13                  Q. Starting approximately three years  
14      from now?

15                  A. No, starting as soon as it is  
16      recognized, and it would be recognized evolving over a  
17      period of time.

18                  THE CHAIRMAN: Well, excuse me, Mr.  
19      Snelson. Doesn't this process go on all the time?

20                  MR. SNELSON: Yes, that is --

21                  THE CHAIRMAN: You don't stop and put  
22      your papers away and then come back; you keep on this  
23      all the time, don't you?

24                  MR. SNELSON: That is precisely the point  
25      I am trying to make.

1 MR. RODGER: Q. Just to follow up on the  
2 Chairman's point, when I reviewed earlier this morning  
3 how Hydro had experienced a shortfall on all of its  
4 demand management targets for last year --

5 MR. B. CAMPBELL: Just a minute, Mr.  
6 Chairman. That is not correct. Some of those targets  
7 were achieved in one sector and the total was in excess  
8 of the program objectives.

9 THE CHAIRMAN: I am not sure that is --  
10 what page 1 seems to say, unless I misread it.

11 MR. B. CAMPBELL: Well, Mr. Chairman, if  
12 you look at page --

13 THE CHAIRMAN: All right. You are right.  
14 You are right.

15 MR. B. CAMPBELL: It shows that for the  
16 total the targets were exceeded and exceeded in the  
17 industrial sector.

18 THE CHAIRMAN: You are right. Yes. I  
19 was looking at the next line.

20 MR. RODGER: Q. I understand that save  
21 for the industrial sector conservation targets Hydro  
22 fell short in all the other targets?

23 MR. SHALABY: A. We talked about that  
24 this morning.

25 Q. Yes.

1 A. Nothing more to add to that.

2 Q. All right. But just to follow up on  
3 Mr. Chairman's point, certainly the results of last  
4 year haven't resulted in any changes in future demand  
5 management targets; you are still going with the  
6 targets that you have estimated for the year 2000 and  
7 2014?

8 A. That is correct.

9 Q. So we know it is not one year of  
10 falling short where you have to make that decision.

11 A. We don't accept that we fell short.

12 Q. Well, where am I making a mistake,  
13 Mr. Shalaby? You set a target; you achieve less than a  
14 target. Isn't that falling short?

15 A. The energy efficiency targets have  
16 been met and exceeded. The 212 is higher than 199.  
17 The load shifting targets have not been met, and we  
18 have seen an adjustment in the forecast and the plan to  
19 reflect that.

20 So the target is still there. Our plan  
21 is now a smaller number than the forecast, than the  
22 target, to signal a potential shortfall in load  
23 shifting and to be made up elsewhere.

24 Again, we spoke about that yesterday at  
25 length.

1 Q. So if we look at the '91 results  
2 would it be fair that we can thank the industrial  
3 sector for keeping Hydro's demand management targets on  
4 stream?

5 A. If you want to thank the industrial  
6 sector do that on our behalf, yes.

7 Q. Now, if I could ask a point of  
8 clarification with respect to the sample response  
9 portfolio. That is page 10 of my exhibit. And this is  
10 the first response under the element "Promote Demand  
11 Management and NUGs". The response is: Build CTUs and  
12 other major supply.

13 In this hearing when we talk about major  
14 supply we have generally talked about major fossil and  
15 nuclear. In that response the way it is worded does  
16 that mean that CTUs could be considered major supply?

17 MR. SNELSON: A. In Exhibit 3 I believe  
18 CTUs are included in the category of major supply.

19 Q. So CTUs could be used for base load  
20 plants, then?

21 A. Physically they could, but we don't  
22 equate major supply with base load plants.

23 Q. Now, Mr. Snelson, this goes back to a  
24 discussion you had yesterday with Mr. Watson regarding  
25 an earlier panel on lead times, CTUs, and there was

1 some discussion about questions that I asked you that  
2 perhaps it might be prudent to buy options from  
3 manufacturers regarding CTUs so you don't get caught at  
4 the end of the line.

5 Your testimony at that time was that  
6 Hydro would consider it, but there is not such a risk  
7 that makes that route preferable at this time; is that  
8 fair?

9 A. That is correct.

10 Q. And I understand your evidence  
11 yesterday to be that that risk still isn't high enough  
12 to go that step of securing these options.

13 A. That is correct.

14 Q. Given that the shift in Hydro's  
15 planning philosophy has changed so radically from 1989  
16 to now by emphasizing the short lead time options  
17 and given the change since your earlier testimony, why  
18 wouldn't Hydro consider doing that now?

19 A. I think we have a lesser reliance on  
20 combustion turbines today than we had in 1989.

21 Q. But the response portfolio or  
22 planning around the median doesn't change that?

23 A. I have indicated that we have lesser  
24 reliance on combustion turbines now than we had in  
25 1989.



1                   Q. Now, staying with the sample response  
2 portfolio the element at the bottom of the chart shows  
3 CTUs, and the risk identified is that approvals are not  
4 obtained in time or to meet need. And the response is:  
5 more demand management, NUG or purchases.

6                   Could you give me some idea of which  
7 demand management programs would be pushed further, or  
8 are there additional programs that you have in mind  
9 that might apply?

10                  MR. SHALABY: A. I think it will depend  
11 on the extent of success that we meet along the way.  
12 If we find, for example, that commercial lighting  
13 programs are achieving their targets and there is more  
14 to be had that would be an area that we will go to.

15                  Q. So at this time at least there is no  
16 additional or demand management programs which you  
17 believe you can get further results from? Those aren't  
18 identified at this time?

19                  A. Well, we indicated as well that we  
20 looked at fuel switching in natural gas areas only, and  
21 the point was made that there could be fuel switching  
22 to other fuels, and if that was made that would  
23 increase the demand management potential.

24                  So there are areas such as fuel switching  
25 to other fuels other than natural gas that could

1 increase the demand management achieved.

2 Q. Now, in your direct evidence you  
3 discussed what you identified as the delay recognition  
4 analysis. Could you just explain that for me once  
5 again, please?

6 A. You are referring to 452?

7 Q. Yes.

8 A. One of the 452...

9 Q. Page 20 or 21.

10 A. Page 21 of Exhibit 452?

11 Q. Yes, I thought it was page 20 or page  
12 21. Actually, it is page 21, the first paragraph under  
13 "Cost Considerations".

14 A. Yes?

15 Q. And I thought that this delay  
16 recognition analysis was that it took approximately  
17 five years to recognize new trend lines in customer  
18 demands.

19 A. I think the sentence starts with "In  
20 order to provide an analysis..."

21 I think analysts become uncomfortable  
22 with, well, we deal with it from day to day and there  
23 will be conditions that would trigger recognition and  
24 so on.

25 An analyst working on a computer program

1 or something similar to that will find it difficult to  
2 work with -- the company will decide based on various  
3 factors whether to act or not.

4 [12:15 p.m.]

5 So they make assumptions, and the  
6 assumption they make is that deviation will be  
7 recognized in five years.

8 So all I am saying here is that you want  
9 to recognize that analysts have to make simplifying  
10 assumptions, and they indicate there, it is a simple  
11 assumption and in their judgment a reasonable  
12 assumption.

13 Q. And staying with that first  
14 paragraph, I understand that what you did in this case,  
15 recognizing that that five-year period is flexible,  
16 that you started the five-year period in 1992 and you  
17 are saying that if trends change it will be  
18 approximately 1997 when you can look at it again; is  
19 that right, in terms of what you have done here?

20 A. Look at what again?

21 Q. You are saying it takes approximately  
22 five years to recognize changing trends with respect to  
23 electricity.

24 A. That's the assumption made for the  
25 purpose of this analysis, yes.

1 Q. And you have said in 1997 you can  
2 have a look at it again and that will be five years  
3 from 1992 to 1997, we will see what happens in 1997,  
4 see what changes are out there.

5 That's how I understand this delay  
6 recognition analysis that was talked about.

7 A. I think the delay recognition here  
8 says, let's assume Hydro behaves as if we are on the  
9 current median, even though the demand is now growing  
10 at faster than median, we will not fully recognize that  
11 we are higher than median and take actions commensurate  
12 with that except five years from now.

13 Because, you see, every year that the  
14 actual demand is different than the forecast, every  
15 single year the demand is different than the forecast.  
16 The question is, do you think this was a cold winter or  
17 there were labour strikes in the north or south, or  
18 this was a heavy air conditioning season. You try and  
19 figure out why the demand is different than you  
20 forecast. And sometimes you would say, well, maybe the  
21 demand is growing faster, maybe it's growing slower.  
22 And most of the time you say, let's hold on and see  
23 what happens a year after that.

24 So that is the recognition that a  
25 one-year reading or perhaps a two-year reading does not

1 necessarily trigger in management and in the company  
2 planners' minds that things are significantly  
3 different.

4 Q. And you chose as your starting point  
5 the year 1992, didn't you?

6 A. For the analysis year, yes.

7 Q. Mr. Shalaby, why wouldn't you start  
8 of the five-year clock running, if I can put it like  
9 that, back in 1989 when you submitted the DSP?

10 A. What purpose would that serve?

11 Q. I am just wondering whether Hydro is  
12 concerned of having their starting point in the depth  
13 of a recession, whereas if you went back to '89 when  
14 you initially submitted the plan, that that might more  
15 accurately reflect the ups and downs of the market, as  
16 opposed to starting from the lowest of the low.

17 THE CHAIRMAN: Excuse me for  
18 interrupting, but I take it that 452 is a recognition  
19 of a new trend line. Is that not correct?

20 MR. SHALABY: Yes.

21 THE CHAIRMAN: And that's three years  
22 after. So the five years isn't an arbitrary figure, I  
23 take it. You can recognize it earlier or later.

24 MR. SHALABY: Yes. I am saying just for  
25 analysis purposes the five-year was assumed.



1 I am still struggling with the issue of  
2 why did not assume '89 versus '92. The question  
3 addressed by this analysis was -- what they were doing,  
4 just to remind ourselves, is a comparison of the two  
5 approaches to deal with uncertainty.

6 So the purpose of the analysis was, if we  
7 adopt this approach to managing uncertainty versus the  
8 other one, what are the consequences. And it is more  
9 useful to a decision-maker to know the consequences if  
10 we adopt that approach now, rather than if we had  
11 adopted that approach in 1989.

12 MR. RODGER: Q. Perhaps my confusion is  
13 coming, I took that five years to be a bit more fixed  
14 figure and that's when the larger assessment would  
15 come. But if it was for analytical purposes only and  
16 this assessment is going on constantly, that's what I  
17 was just unclear about.

18 MR. SHALABY: A. Okay.

19 Q. Now, page 12 of my exhibit, which is  
20 page 32 of Exhibit 682, shows that fuel cells will  
21 account for approximately 1,500 megawatts of capacity  
22 in this enhanced case. My question simply is to you:  
23 What has happened in the area of fuel cells since this  
24 hearing began where now they can be included in a case  
25 for such a significant amount of --

1 THE CHAIRMAN: I don't like to interrupt  
2 you, but Mr. Shalaby went into that in quite a bit of  
3 detail in, I think it was, Panel 8, was it not? And it  
4 has been the evidence of the panel here that one of the  
5 reasons for the downgrading, or level of status, or  
6 whatever they call it, of the enhanced plan is the  
7 uncertainty about the fuel cells.

8 MR. RODGER: I guess it was just in  
9 addition to that earlier of testimony, Mr. Chairman,  
10 it wasn't clear whether there was further developments  
11 not withstanding that uncertainty it in the area of  
12 fuel cells.

13 MR. SHALABY: We described the  
14 developments in Exhibit 344 and in the testimony of  
15 Panel 8 and in various interrogatory responses.

16 MR. RODGER: Q. I wanted to spend a  
17 couple of minutes on the moratorium on nuclear. I  
18 believe it was in your direct evidence in this panel  
19 and certainly in the Update, it spelled out that the  
20 moratorium on nuclear represents a change in the  
21 planning environment.

22 Mr. Shalaby, in earlier discussions with  
23 you on this matter, you agreed that the moratorium  
24 certainly reduced Hydro's planning flexibility. Do you  
25 still agree with that?

1 MR. SHALABY: A. To install nuclear  
2 power plants, I think in that context I agree.

3 Q. And you would agree with me that this  
4 is an example where a government action has hampered  
5 Ontario Hydro's planning flexibility?

6 A. It's a government direction to  
7 Ontario Hydro, and the consequence of that is reduce  
8 flexibility to add nuclear power plants.

9 Now, when that is coupled with our need  
10 for major supply, the result is not as drastic. There  
11 is, as Mr. Snelson iterated over and over, there is no  
12 need for major supply in the foreseeable future. So in  
13 that sense it isn't that we need something in the very  
14 short term and it was taken away.

15 Q. Mr. Snelson, when you discussed with  
16 Mr. Mark about this planning committee at Hydro that  
17 made the decision to abandon the planning to the upper,  
18 I take it that there must have been some discussion  
19 regarding the moratorium on nuclear.

20 MR. SNELSON: A. The moratorium on  
21 nuclear pre-engineering, which is I believe what it is,  
22 was one of the factors in place at the start of the  
23 Update to preparing the Update. That was a given in  
24 the update process because it had been stated and it  
25 was policy direction from the government.

1                   Q. So I take it then that it put the  
2                   planning committee in a position where even if you  
3                   wanted to pursue nuclear, you could not have because to  
4                   do so would be to conflict with government policy;  
5                   isn't that correct?

6                   A. We were in the position where we  
7                   could not conduct pre-engineering on a nuclear plant,  
8                   but we were also in a position where we didn't feel we  
9                   needed to conduct pre-engineering on a nuclear plant at  
10                  this time.

11                  Q. So in any way did Hydro feel that  
12                  this moratorium on nuclear somehow handcuffed you in  
13                  terms of the choices that you had and the choices that  
14                  you could put forth?

15                  A. I did indicate in my direct evidence  
16                  that it was an indicator of a less favourable public  
17                  policy position towards nuclear and that was one of the  
18                  reasons that we changed our views with respect to the  
19                  preference in nuclear over fossil, that we currently  
20                  have not made that choice at this time, and that's one  
21                  of the factors that has changed.

22                  Q. And would you agree with me that if  
23                  in fact Hydro's preference or choice was nuclear, that  
24                  option would still not be available to you because of  
25                  the moratorium?

1 A. No.

2 Q. So, no, you would still have that  
3 option?

4 A. I think we have indicated that one of  
5 our plans for the future is the Update with the major  
6 supply requirement and the base load part of that being  
7 by nuclear, and that's one of the possible ways in  
8 which the major supply could be met. That's part of  
9 our plan in the Update.

10 Q. So could you tell me, Mr. Snelson,  
11 throughout this hearing we have heard much about the  
12 planning process that has involved years of  
13 preparation, numerous public consultation and so forth,  
14 and after that tremendous amount of scrutiny and review  
15 you come up with a Plan 15 whose preference is nuclear,  
16 and bearing in mind that the approvals are only for  
17 requirement and rationale, you still can't build  
18 anything, then there is a change in government, whose  
19 philosophy is anti-nuclear and a moratorium on nuclear  
20 is imposed, and a few months later Hydro comes out with  
21 a plan that has no nuclear in it, and that is a happy  
22 coincidence, is it?

23 MR. B. CAMPBELL: Mr. Chairman, if my  
24 friend wants to get an argument, that is fine, but I  
25 think it has been more than adequately explained the



1 nature of the Update. And I think Mr. Snelson has made  
2 it clear that in the longer term Hydro still sees  
3 nuclear as an option that it is prepared to consider  
4 for planning purposes.

5 My friend's question, in addition to  
6 being argumentative, is simply based on a faulty  
7 premise, and I think the evidence on that is clear.

8 THE CHAIRMAN: Perhaps I could ask Mr.  
9 Snelson.

10 If there had been no Update, everything  
11 that has occurred had occurred, what effect, if any,  
12 would the moratorium have had on the preferred Plan 15?

13 MR. SNELSON: If nothing had changed  
14 since 1989 except for nuclear moratorium, so there  
15 would be no change in the expectations with respect to  
16 demand management or non-utility generation and no  
17 changes in the things like gas prices and so on, then  
18 clearly some aspects of Plan 15 would no longer have  
19 been feasible.

20 Plan 15 replied upon nuclear plant  
21 specified as being a 4 by 881 unit similar to  
22 Darlington to be in-service in 2002 under upper load  
23 growth, and 2003 under median load growth, and the  
24 moratorium, together with the cancellation of the  
25 definition phase work as a result of that moratorium,

1 would have made those dates infeasible.

2 THE CHAIRMAN: You have had to advance  
3 those dates.

4 MR. SNELSON: Well, they would have to be  
5 further back in time, which I think is delayed them.

6 THE CHAIRMAN: Delayed, right.

7 MR. RODGER: Q. So if I can summarize  
8 the point, Mr. Snelson, it's that the abandonment of  
9 seeking approvals for new major supply for nuclear,  
10 that decision was independent of the moratorium?

11 MR. SNELSON: A. I indicated in my  
12 direct evidence that there was some influence.

13 Q. There was some influence?

14 A. Yes.

15 DR. CONNELL: Mr. Snelson, could I infer  
16 then that there may have been some influence of the  
17 moratorium on your judgment with respect to fossil base  
18 load supply as well?

19 MR. SNELSON: I am not aware of any  
20 specific influence of the moratorium on the fossil base  
21 load supply.

22 I believe that the moratorium only  
23 applies to the nuclear. We didn't read into that that  
24 a favourable policy indication to fossil options.

25 DR. CONNELL: I wasn't intending to imply

1 that, but I was simply drawing on your earlier  
2 observation that you took the moratorium as an  
3 indicator of - I forget how you put it - reduced public  
4 support for the nuclear option.

5 I take it it follows that your judgment  
6 at present is that rather than clearly favouring the  
7 nuclear option for base supply, you perceive that the  
8 nuclear option and the fossil option are more nearly  
9 competitive, that the outcome of that comparison may be  
10 clarified by the passage of time, and that in order to  
11 achieve that measure of clarification it would be  
12 prudent to defer commitment to fossil base load as well  
13 as to nuclear base load.

14 Is that too complex a chain of reasoning?

15 MR. SNELSON: I think it is a little  
16 complex.

17 I think that it is correct that, for  
18 instance, the cost differential between nuclear and  
19 fossil has closed somewhat, that there is a lesser  
20 degree of confidence in the nuclear option. I mean we  
21 have just built a major plant and at present it isn't  
22 working. And we are planning to solve those problems,  
23 we expect to solve those problems, but at this point in  
24 time that new plant is not working, and we are  
25 experiencing some lower performance from existing

1 plant, nuclear plant, than we had planned upon. We  
2 need time to resolve some of those issues to see  
3 whether they in fact -- it's prudent that we wait until  
4 some of those factors are resolved.

5 DR. CONNELL: Let me come at it a  
6 slightly different way. Let me suppose that there had  
7 been some circumstances perhaps related to public  
8 opinion or other factors that seemed to tilt the case  
9 quite decisively and permanently against the nuclear  
10 option, and therefore in favour of the fossil base load  
11 option, do you think it likely then that we might have  
12 seen an update in which Hydro sought some approval for  
13 fossil major supply?

14 MR. SNELSON: With the other changes that  
15 are in the Update in terms of demand management,  
16 non-utility generation, load forecast, et cetera, then  
17 I don't believe that we would be seeking approval for  
18 fossil options either because as we indicated we don't  
19 need those approvals, and if anything, the fossil  
20 options tend to have shorter lead times than the  
21 nuclear options, and so the need for approvals now  
22 rather than approvals later is less with fossil options  
23 than it would be with nuclear options.

24 DR. CONNELL: Thank you.

25 THE CHAIRMAN: I perhaps didn't make my

1 question as clear as I ought to have a few moments ago.

2 I was assuming that the world had  
3 unfolded as it has, but that you had not got around to  
4 doing an update of the comprehensive nature that you  
5 did, you were quite aware of all of the circumstances,  
6 and my question in that context was, what effect would  
7 the moratorium have had on what you were doing?

8 MR. SNELSON: I'm sorry, if the world  
9 unfolded as...

10 THE CHAIRMAN: As it has.

11 MR. SNELSON: As it has.

12 THE CHAIRMAN: That is there is a lower  
13 load, there is increased demand management targets,  
14 there are increased NUG targets, there is the  
15 moratorium. There is all the things that happened, but  
16 nobody has yet sat down and done Exhibit 542, but you  
17 are looking to see what effect, if any, on the current  
18 position, that is Exhibit 3, what effect does the  
19 moratorium have on that. That was my question, if you  
20 can answer it. I don't know whether you can or not.

21 MR. SNELSON: There's rather a lot of  
22 hypotheses in that I'm having a bit of difficulty with.  
23 The world has changed but we haven't done an update.

24 THE CHAIRMAN: That's right.

25 MR. SNELSON: And then the nuclear



1 moratorium is imposed now but hasn't been imposed up  
2 until now.

3 THE CHAIRMAN: No, it's imposed in  
4 November 1990. Nothing has changed except you haven't  
5 yet sat down and done Exhibit 452.

6 MR. SNELSON: I don't know that we would  
7 produce anything different to what we presently have as  
8 Exhibit 452.

9 THE CHAIRMAN: I don't mean that. I just  
10 want to know what effect the moratorium would have on  
11 what you would be doing, that's what I am trying to get  
12 if I can.

13 [12:38 p.m.]

14 MR. SNELSON: Well, I am having problems  
15 with the question. Maybe I am dense, but --

16 THE CHAIRMAN: I am sure I am not making  
17 it clear.

18 MR. SNELSON: It seems to me that  
19 everything has happened as it has happened, including  
20 the moratorium, and we are now sitting down to do the  
21 Update.

22 THE CHAIRMAN: So, you are asking  
23 yourself: What effect does this have on Exhibit 3?  
24 What effect does the moratorium have on the plans as  
25 set out in Exhibit 3?

1 MR. SNELSON: Well, clearly it would have  
2 the effect that some of the dates that were shown there  
3 were not achievable.

4 THE CHAIRMAN: I see. All right.

5 MR. SNELSON: But it would also be that  
6 the other changes would probably make those dates not  
7 necessary either.

8 THE CHAIRMAN: That is the point I was --

9 MR. SNELSON: Yes. And that makes it  
10 very similar to what we have today.

11 In considering the moratorium effect we  
12 would be forced to consider the effect on the actual  
13 in-service dates of facilities, but we would also be --  
14 we couldn't put our heads in the sand and say we won't  
15 consider the effects of the changes in the demand  
16 management program and the NUG program and gas prices  
17 and so on. You couldn't put your head in the sand and  
18 say, so the moratorium has delayed in-service date for  
19 the nuclear facilities but we still want them by those  
20 dates, irrespective of the fact that they are no longer  
21 needed.

22 THE CHAIRMAN: All right.

23 MR. RODGER: Q. One final question on  
24 this point, Mr. Snelson.

25 You said that the decision of the

1 government and the moratorium had some influence on  
2 Hydro's decision to abandon the approvals for new  
3 nuclear. Could you tell me how that influence was  
4 exerted?

5 MR. SNELSON: A. By the imposition of  
6 the nuclear moratorium.

7 Q. And that was the extent of it?

8 A. As far as I know, yes.

9 Q. I will leave that for the time being.

10 Mr. Snelson, would you agree that any way  
11 you look at the change of planning to the upper to  
12 planning around the median, that in any event it  
13 constitutes a very dramatic shift in Ontario Hydro's  
14 planning; would you agree with that?

15 A. This is the change from planning to  
16 the upper to planning to the median?

17 Q. Yes, planning around the median.

18 A. It is a change. It is a change in  
19 the way in which we anticipate managing uncertainty.  
20 It doesn't alter the fact though that we intend to plan  
21 to meet the range of the load forecast.

22 Q. But I take from that that you don't  
23 see it as a particularly dramatic or radical change in  
24 approach.

25 A. Well, it is a change, and whether you

1 judge it to be dramatic or radical is sort of a  
2 subjective matter.

3 MR. SHALABY: A. Perhaps I can remind  
4 you of something we said in direct testimony, direct  
5 evidence.

6 I said that in managing uncertainty, in  
7 dealing with uncertainties many things have remained  
8 the same, and this one thing, requesting approvals for  
9 major supply, has changed.

10 Perhaps if you focus on the things that  
11 have remained the same you could get the other side of  
12 the perspective, and the things that have remained the  
13 same are the nature of the uncertainties, the  
14 availability of short lead time options to meet some of  
15 the uncertainties, and the responses that Hydro would  
16 have had to use with or without major supply.

17 So I think there is a lot more in common  
18 than there is differences in the two approaches. By  
19 focussing on the difference you may perceive it to be a  
20 dramatic change; if you focus on the common things  
21 perhaps you can come up with a different conclusion.

22 Q. Let me put my client's concern to  
23 you.

24 I don't think it is any secret by now  
25 that AMPCO does see the change as being very dramatic,

1 and I think the change of approach is very well  
2 illustrated for us, if I could point out a couple of  
3 quotes to you of earlier transcripts of Hydro  
4 witnesses.

5 The first is in Volume 60, page 10720.

6 And I could have picked out a number of quotes  
7 throughout the hearing, but this was a discussion that,  
8 Mr. Shalaby, you and I had back in the fall, and here  
9 we were talking generally about demand management  
10 targets and so forth.

11 Starting at line 3 of page 10720 you  
12 respond, Mr. Shalaby:

13 If you have a plan that is flexible  
14 enough to respond to upper load growth it  
15 will be flexible enough to respond to  
16 shortfalls in demand management, provided  
17 you don't get hit with both upper load  
18 growth and low yield in demand  
19 management.

20 What we are presenting to this Board  
21 is a plan that has flexibility. If we do  
22 have approvals and we have engineering  
23 work under way and we have options open  
24 to us to respond to upper forecasts, we  
25 will have a package of options ready to



1                   respond to many other contingencies as  
2                   well as -- such as delays in NUGs, or  
3                   poor performance of our existing units,  
4                   or a dry year that has low water  
5                   conditions, many, many other  
6                   contingencies that we have, including low  
7                   yield in demand management.

8                   I just want to read one more brief quote,  
9                   same volume, page 10737, and this was a discussion I  
10                  had with Mr. Burke, again on the same topic of demand  
11                  management targets and so forth.

12                 Mr. Burke quite rightly pointed out to  
13                  me, starting at line 10 of page 10737:

14                         The other concern I have before you  
15                         leave is the obsession with the year  
16                         2000. To me the long term is well beyond  
17                         that. To the year 2000 is really a short  
18                         distance away in terms of our business,  
19                         and meeting requirements over the entire  
20                         period of the plan we are putting forth  
21                         should always be kept in mind and not  
22                         just a particular year or particular  
23                         period. We have got to look into 2005  
24                         and 2010. In terms of our business that  
25                         is the relevant time frame to look at as

1 well.

2 And I understand from Panel 10 evidence  
3 that in essence the approach is now, and it was  
4 described by Hydro this way, as the just-in-time  
5 approach; you only make decisions when necessary.

6 A. Yes.

7 Q. And that is where we see the dramatic  
8 shift in focus. Are you saying now that the passages  
9 that I have read to you, are they now entirely  
10 consistent with this just-in-time approach, or is my  
11 client just not perceiving this correctly?

12 A. I am not wanting to go back over the  
13 transcripts line by line, but I didn't perceive that to  
14 be contradicting the just-in-time decision-making.

15 Where do you see a contradiction between  
16 keeping options open, maintaining the ability to  
17 respond to various contingencies, and the just-in-time  
18 decision-making?

19 Q. Well, to give one, I guess the  
20 easiest example is the best way to keep options open  
21 from AMPCO's point of view is to have the approvals in  
22 your back pocket. And now you won't have that option,  
23 will you.

24 A. That is one of many options of  
25 meeting additional demand.

1 Q. And that --

2 A. And we indicated in our testimony  
3 that we see other options as being more suitable at  
4 this time, and we see in fact risk to seeking approvals  
5 now, letting them sit for a long period of time and  
6 they may not be any good at the time you need them.

7 Q. So I take it it is your evidence, Mr.  
8 Shalaby, that you at least don't see a dramatic change  
9 as I am describing?

10 A. I see a change, same as Mr. Snelson  
11 described to you. We see a change.

12 I am encouraging you to look at the  
13 similarities in the way we meet uncertainties and  
14 manage uncertainty now as we did before to put that  
15 change in perspective. It is a change, but there are  
16 many things that remain common.

17 Q. I want to ask you about specific  
18 approvals that you are now seeking, and I have on page  
19 13 and 14 of my exhibit, which is the Approval section  
20 from the Update, and just so that we can contrast and  
21 compare the approvals I understand that under Plan 15  
22 Hydro was seeking approval for requirement and  
23 rationale for new major supply, that major supply being  
24 nuclear, so that if that approval was in place then  
25 Hydro would go directly to a site-specific hearing

1 should that option be required.

2 Is that a fair characterization?

3 MR. SNELSON: A. I'm sorry, I missed  
4 some parts of it.

5 Q. Under Plan 15--

6 A. Yes?

7 Q. --it is my understanding that part of  
8 the approvals, one of the approvals you were seeking,  
9 is requirement and rationale for major new supply, and  
10 as part of that major new supply was the nuclear  
11 component.

12 A. Yes.

13 Q. And the idea being that if Hydro  
14 received that, if you like, requirement and rationale  
15 approval, then if Hydro decided it wanted to employ  
16 that option Hydro would take that requirement and  
17 rationale approval and go directly to a site-specific  
18 hearing.

19 A. That would have been the schedule for  
20 the dates of Plan 15, yes.

21 Q. And am I correct when I say that that  
22 approval, that was described as a formal approval?  
23 That was actually the term that was used?

24 A. We were seeking approval under the  
25 Environmental Assessment Act for requirement and

1     . rationale.

2                   Q.   Now, under the Update you have  
3     testified that you want to keep major supply options  
4     open.  However, you are not seeking formal approval or  
5     this required and rationale approval for major new  
6     supply at this time; that's correct?

7                   A.   That's correct.

8                   Q.   And what you are now asking on page  
9     13 of my exhibit, under the heading Matters Under  
10    Consideration by the EAB, you are asking the Board now  
11    to consider a number of matters and those matters  
12    include demand management, fuel switching, non-utility  
13    generation, the role of fossil, the role of nuclear.

14                   I wonder if could you tell me, Mr.  
15    Snelson, what does "consider" mean?

16                   MR. B. CAMPBELL:  Well, Mr. Chairman, on  
17    this matter, this is a matter that goes directly to the  
18    requirements under 5(3) of the Environmental Assessment  
19    Act, and I can tell my friend that it is Ontario  
20    Hydro's position that these questions are illustrative  
21    of, as a matter of law, the kinds of matters that a  
22    Board has to consider pursuant to section 5(3) of the  
23    Environmental Assessment Act.

24                   That is what they are, as pointed out,  
25    intended to deal with.



1 MS. PATTERSON: That doesn't go as far as  
2 guidance for the future, which I thought also was used  
3 as a term.

4 MR. B. CAMPBELL: I don't find those  
5 words on this page. They have been frequently cited to  
6 you, and you will not find them on this page.

7 MS. PATTERSON: Will I find them anywhere  
8 else?

9 MR. B. CAMPBELL: No. You will not find  
10 them in any of the material that is before the Board.

11 It is intended that these questions were  
12 illustrative of the kinds of questions that the Board  
13 would have to deal with in reviewing the various  
14 options. I think it is fair to say, as is pointed out  
15 underneath the questions, that the Board's views on  
16 these matters generally obviously will be of interest  
17 to the planners and they will no doubt be helpful to  
18 the planners.

19 But I think what you have in front of you  
20 deals with as a description of the kinds of questions  
21 that Ontario Hydro takes the position -- or certainly  
22 its understanding of the Environmental Assessment Act  
23 is that section 5(3) would require, in this kind of a  
24 hearing would require the consideration of these kinds  
25 of questions.

1                   THE CHAIRMAN: Well, I am not going to go  
2 through all the material just to look for the word  
3 "guidance", but I do recall Hydro witnesses saying to  
4 us that they would welcome views about the various  
5 options in a comprehensive way, and I do recall, even  
6 today, one witness at least saying that a hearing of  
7 this kind would provide a foundation for future  
8 hearings. I heard those remarks being made.

9                   MR. B. CAMPBELL: I don't disagree, Mr.  
10 Chairman, and nothing I am saying should be taken as in  
11 any way intended to contradict or be different from  
12 those positions.

13                  THE CHAIRMAN: To cut it short, I take it  
14 you are, on behalf of the panel, answering Mr. Rodger's  
15 question, and I guess Mr. Rodger can then ask his next  
16 question.

17                  MR. B. CAMPBELL: I have no right to  
18 answer on behalf of the panel, nor do I seek to do so,  
19 Mr. Chairman.

20                  THE CHAIRMAN: He can decide whether to  
21 accept it or not or whether that is an acceptable  
22 answer as far as the panel is concerned.

23                  MR. B. CAMPBELL: My point, Mr. Chairman,  
24 is just that these, in my submission, are section 5(3)  
25 matters, and that is their purpose.

1 THE CHAIRMAN: Well, I don't want to  
2 renew that debate. We have had that debate before.

3 MR. RODGER: And my concern, Mr.  
4 Chairman, is that I believe that the participants and  
5 parties at this hearing are entitled to know what the  
6 effect will be of the Board's, "consideration" of some  
7 of these very important matters.

8 THE CHAIRMAN: Well, Mr. Campbell's right  
9 at least to this extent, that that is something that  
10 they perhaps can't answer.

11 MR. RODGER: Q. Or can you answer that,  
12 Mr. Snelson?

13 Let me put it this way. Will the Board's  
14 views on, let's say, for example, major new supply,  
15 will that commentary be merely interesting for Hydro  
16 planners, will Hydro planners feel bound by that in  
17 future? Those are the kind of issues.

18 THE CHAIRMAN: Well, I don't think they  
19 can answer that, I'm afraid. The effect of what is  
20 done here, whatever that may be, is something I don't  
21 think you can ask these witnesses to speculate about.

22 MR. RODGER: Q. Just so I have it clear,  
23 so we are not sure what "consider" means then? Or  
24 Hydro is not sure what the outcome of asking the Board  
25 to consider these matters is?

1 MR. B. CAMPBELL: I thought I had been  
2 perfectly clear, Mr. Chairman.

3 We believe there are two aspects to this.  
4 The one is that these are the kinds of questions that  
5 the Board must consider in dealing with section 5(3)  
6 requirements under the Act.

7 We in fairness have pointed out that the  
8 answers to these and related questions are pertinent to  
9 planning generally, and it is because they are  
10 pertinent to planning generally that they will be both  
11 of interest to the planners on this panel, of course,  
12 and they will be pertinent to and relevant to the  
13 Board's considerations under section 5(3).

14 MR. RODGER: Mr. Chairman, I am going to  
15 start a new section. I have gone through this a lot  
16 quicker than I thought I would, and I should be  
17 finished in about half an hour after the lunch. I  
18 wonder if could I take the break now?

19 THE CHAIRMAN: That would be fine.

20 Mr. Heintzman, you will be ready to  
21 follow on?

22 MR. HEINTZMAN: I think Mr. Greenspoon  
23 and I have decided to change places. I will be longer  
24 than he, and he would prefer to go first, and I think  
25 it would be easier, if that is all right with the

1 Board.

2 THE CHAIRMAN: That is all right with the  
3 Board, yes.

4 MR. HEINTZMAN: I will be ready as soon  
5 as he is finished, if that is okay with everybody else.

6 MR. GREENSPOON: We have been keeping Ms.  
7 Morrison informed of this change.

8 THE CHAIRMAN: Adjourned until 2:30.

9 THE REGISTRAR: Please come to order.  
10 This hearing will adjourn until 2:30.

11 ---Luncheon recess at 12:56 p.m.

12 ---On resuming at 2:35 p.m.

13 THE REGISTRAR: Please come to order.

14 This hearing is again in session. Please be seated.

15 THE CHAIRMAN: Mr. Rodger?

16 MR. RODGER: Thank you, Mr. Chairman.

17 Q. Mr. Snelson, yesterday afternoon you  
18 spoke about the Little Jackfish project, and the gist  
19 of the evidence, as I understood it, was that with  
20 respect to decisions surrounding that project, Hydro  
21 was sensitive to the public perception that it was  
22 serious about the endeavour and it didn't want to be  
23 seen as somehow wasting people's time or money.

24 Do you recall that testimony?

25 MR. SNELSON: A. I recall the discussion



1 of why it was excluded and not completed in the  
2 illustrative surplus management cases.

3 Q. And if you turn to Volume 151, page  
4 26779, I can highlight the theme that I was raising  
5 which was the idea of sensitive to public perception  
6 and see if I have it correctly.

7 A. I'm sorry, we are just trying to get  
8 the volume.

9 THE CHAIRMAN: You say 26779?

10 MR. RODGER: 26779, yes, Mr. Chairman.

11 Q. You described in that testimony how  
12 the project at one point was on, at another point off,  
13 and starting at about line 9, you state:

14 And now the project is going again,  
15 and if it was to be another off-again  
16 situation, then there have been views  
17 expressed in the organization that there  
18 would be difficulty in getting that  
19 project going again and convincing people  
20 that we were serious and that we weren't  
21 just playing around and wasting people's  
22 time.

23 I took from that that there was a concern  
24 about public perception.

25 MR. SNELSON: A. Yes.

1 Q. Now, if you could turn to Appendix A  
2 of Exhibit 542, please. This is the Demand/Supply Plan  
3 chronology starting back in 1984. Would you agree with  
4 me, Mr. Snelson, that many of the items listed in this  
5 chronology, they have to do with major supply options?

6 A. I see items such as the Ontario  
7 Nuclear Safety Review and the Ontario Nuclear Cost  
8 Inquiry and the Thermal Cost Review as being  
9 specifically directed towards major supply options.

10 Q. Yes. And other aspects of the  
11 studies listed on that page, for example, the Select  
12 Committee on Energy, while not specifically on major  
13 new supply, the major options were discussed at those  
14 levels as well, weren't they?

15 A. Most of the other items on this list  
16 were dealing with the full range of demand and supply  
17 options including major supply options.

18 Q. And, of course, we have the  
19 culmination of that background work in December 1989  
20 with the release of the DSP, and of course at that time  
21 the preferred plan was Plan 15.

22 Now, with respect to the issue of Hydro's  
23 sensitivity to public perception, if we can put it that  
24 way, when the decision was made back in the fall of  
25 1991 to change planning direction, to change the

1 planning approach, at that time did Hydro consider that  
2 in so doing it might run the risk of creating a  
3 perception among the public that a tremendous amount of  
4 time and money had been wasted in the abandonment of  
5 major supply approvals at this hearing?

6 A. I think that we were conscious of the  
7 amount of effort that had gone into this hearing and  
8 the perceptions of that, but I couldn't see that that  
9 would be a reason to continue to ask for approvals that  
10 you don't need.

11 Q. So that wasn't a major consideration  
12 then?

13 A. No, I don't believe it was the major  
14 consideration.

15 Q. I have one final question, panel, and  
16 I will give you a hypothetical, put the question in  
17 context. We are now at time in the future where all  
18 the evidence has been heard at this hearing and the  
19 Board brings down its decision, and in that decision it  
20 basically gives you approval for what you are seeking  
21 in terms of the range of hydraulic and for the new  
22 transmission lines, but it attaches a condition to  
23 those approvals, and it says that after looking at all  
24 the evidence, because there is uncertainty in load  
25 growth, because there is uncertainty in demand

1 management, uncertainty into fuel prices, political  
2 uncertainty, uncertainty with the Manitoba Purchase,  
3 uncertainty with the existing system, that it gives  
4 approval for major supply options, be it fossil or  
5 nuclear, and it says to Ontario Hydro, "If you need  
6 that option, it's there and you can go directly to a  
7 site-specific hearing, and if you decide you don't need  
8 it, you don't have to use it." Perhaps the Board would  
9 call that option strategic reserves.

10 Would you agree with me, Mr. Snelson,  
11 that if that decision was to come about, that that  
12 would do absolutely nothing to inhibit or otherwise  
13 frustrate Ontario Hydro's planning?

14 A. I wouldn't agree with that  
15 proposition.

16 Q. How would it inhibit or frustrate  
17 Hydro's planning?

18 A. I think there is a sense that if we  
19 were to receive through this hearing process much more  
20 in the way of approvals than we were requesting, a  
21 greater degree of approval than we need, then there is  
22 a risk that the issues that we are trying to discuss  
23 and trying to have settled here will essentially still  
24 be reopened in subsequent processes. For instance,  
25 when we go to a specific approval for hydroelectric

1 options, if we also have an approval for nuclear  
2 options and we are seen as only needing one or other of  
3 them but not both, then it will be hard to avoid  
4 addressing at that subsequent hearing why you should  
5 proceed with the hydroelectric instead of proceeding  
6 with the nuclear for which you already have requirement  
7 and rationale approval.

8 So there will be a tendency for the  
9 issues, the big issues surrounding nuclear versus  
10 hydraulic, coal versus purchase and so on, all these  
11 big issues to be reopened and re-examined in the  
12 subsequent processes and we wouldn't really have  
13 settled those issues.

14 Q. And couldn't that decision also be  
15 seen as simply giving Ontario Hydro another option?

16 A. It does give Ontario Hydro another  
17 option. It also has this potential to effectively not  
18 to have decided the issues which we are trying to get  
19 settled.

20 Q. Now, Mr. Snelson, my father has been  
21 giving me advice for many years, and I always  
22 considered my father to be a rather wise and prudent  
23 Scotsman, and his advice to me was that in life the  
24 more options you have available to you, the greater  
25 flexibility you will have and ultimately the better off



1       you will be.

2                       Would you generally agree with that  
3       advice?

4                       A. I have indicated it does provide  
5       another option which on the face of it provides  
6       additional flexibility, but I think it has this other  
7       effect of keeping the issues open and ending up with a  
8       significant chance that the issues will be re-examined  
9       in a subsequent process.

10                      MR. RODGER: Those are all my questions,  
11       Mr. Chairman.

12                      Thank you, panel.

13                      THE CHAIRMAN: Thank you, Mr. Rodger.

14                      Hold it, Mr. Rodger, I'm sorry, we are  
15       not quite finished. Dr. Connell has a couple of  
16       questions.

17                      MR. RODGER: I'm sorry.

18                      THE CHAIRMAN: No, it's my fault.

19                      DR. CONNELL: I want to return to a  
20       matter that Mr. Rodger raised this morning which was  
21       the impact of demand management on rates and to recall  
22       the evidence from Panel 4. I am afraid I haven't had  
23       an opportunity to look up the reference, but my  
24       recollection is that we did at one point have some  
25       discussion of the so-called no-losers test, and my

1 recollection is that Hydro had considered that test and  
2 set it aside. And I believe there was reference in the  
3 course of that evidence to the Select Committee which  
4 specifically enjoined Hydro to pursue demand management  
5 without that constraint.

6 Could one of the panelists reflect --

7 MR. SHALABY: All of that is correct, Dr.  
8 Connell. We looked at the no-losers test which would  
9 respect the issue of cross-subsidization or equity, and  
10 we concluded that if we had to implement demand  
11 management in a way that is completely equitable, every  
12 program becomes completely equitable, we would have  
13 very little opportunity to do any demand management.  
14 And the solution that we adopted is to offer a large  
15 menu of programs, maybe every one of them has a bit of  
16 inequity but in total they provide equity to all of our  
17 customers.

18 DR. CONNELL: In the long run as Dr. Long  
19 said this morning.

20 Mr. Shalaby, you went on to say, as I  
21 noted, that your view is that it is necessary to accept  
22 the proposition that there may be some winners and some  
23 losers in order that Hydro can achieve a very  
24 substantial large target of demand management.

25 MR. SHALABY: Yes.

1 DR. CONNELL: Am I quoting you correctly?

2 MR. SHALABY: Yes, you are.

3 DR. CONNELL: I wonder if you know from  
4 awareness of demand management programs elsewhere,  
5 whether there is generally a correlation; that is, are  
6 there any utilities that have adopted the no-losers  
7 policy that have demand management targets which seem  
8 to you to be comparable to that of Hydro?

9 MR. SHALABY: I am not aware of any.  
10 Most utilities that are pursuing significant inroads in  
11 demand management have accepted to go beyond the  
12 no-losers test, they have accepted the inequities that  
13 are inherent in any one program. But they don't leave  
14 it at that, they designed the programs in a way that  
15 make the inequity minimized and they offer a large menu  
16 of programs.

17 The inequity is associated with a single  
18 program and usually can be designed to offset those  
19 inequities within the one program and definitely in the  
20 menu of programs.

21 But the straight answer to your question  
22 is, most aggressive utilities in demand management go  
23 beyond the no-losers test.

24 DR. CONNELL: Do you have any or had any  
25 example of a utility that has adopted the no-losers

1 test and has at least a moderately large demand  
2 management program?

3 MR. SHALABY: I can't think of any off  
4 the top of my head.

5 Many utilities have gone through the  
6 stages of trying to do it the no-losers way and then  
7 recognizing that it puts too many restrictions and  
8 going beyond.

9 So some utilities that may be doing very  
10 well today may have several years ago tried to do it  
11 the no-losers way but abandoned it somewhere along the  
12 way.

13 DR. CONNELL: My other question is to Ms.  
14 Howes who responded this morning to questions about  
15 CO(2) targets and she stressed the need for more  
16 information. I would just like to clarify your  
17 understanding. There is, as I understand it now, a  
18 commitment in place made by the federal government to  
19 meet the 1990 level by the year 2000, and that target  
20 has been affirmed by Ontario, has it not, implicitly?

21 MS. HOWES: There has been agreement with  
22 the target but there has been no agreement on how to  
23 achieve or the actions on strategy. And if I remember  
24 the last, I think it was the March 1992 meeting of  
25 the --

1 DR. CONNELL: Ministries of the  
2 Environment.

3 MS. HOWES: Thank you. CCME, there was  
4 no agreement among the provinces as to a strategy. And  
5 at that time, if I recall correctly, the Province of  
6 Ontario said that they could not commit to a program  
7 and made a commitment to work with their energy  
8 ministers to work out a strategy for achievement of a  
9 target.

10 So, in my mind, there was still some  
11 question as to whether that target is firm and what  
12 actions are actually under way.

13 At that particular meeting as well the  
14 Minister of Environment for Ontario indicated that the  
15 demand management program that Ontario Hydro is  
16 pursuing is a major plank of the government's program,  
17 but that was far as I understand that the provincial  
18 government went in terms of achieving a CO(2) target.

19 DR. CONNELL: I wondered, let me assume  
20 for the moment that that target is made firm and is  
21 extended indefinitely into the future. In your  
22 thinking about it, is it your assumption that Hydro  
23 will play a proportional role in meeting the target?

24 MS. HOWES: Proportional, we would cut  
25 back to the extent that we produce CO(2) emissions?



1 DR. CONNELL: Yes.

2 MS. HOWES: It's rather hard to say. I  
3 would assume that we would be involved in any  
4 discussion of achievement of CO(2) regulations or CO(2)  
5 limits. I would say that probably a proportionate  
6 reduction in our emissions would be possible.

7 DR. CONNELL: If the future as outlined  
8 in Exhibit 452, figure C5, and labelled the fossil  
9 option, if that in fact proved to be an accurate  
10 forecast of what lies in Hydro's future for whatever  
11 reason, is it in your mind conceivable that Ontario  
12 could still meet the target with other corporations and  
13 agencies and institutions and what have you, meeting  
14 targets which are substantially below the illustrated  
15 level here to compensate for Hydro's overproduction?

16 MS. HOWES: That's certainly a  
17 possibility.

18 I think another possibility too is  
19 because global warming CO(2) emissions are a global  
20 issue, there may be offsets, we may be doing things in  
21 other countries to reduce CO(2) emissions there, and  
22 potentially there would be some offset benefit that we  
23 would produce more and achieve CO(2) emission somewhere  
24 else.

25 I think there is a whole range of

1 opportunities for the future. That's why I made the  
2 comment that in terms of making a decision today, I  
3 just don't have enough information to make a judgment  
4 one way or the other.

5 DR. CONNELL: So you think that it at  
6 this stage reasonable and responsible for Hydro to  
7 contemplate a future in which there is very significant  
8 production in excess of the illustrative target?

9 MR. HOWE: I think we could certainly  
10 contemplate a future.

11 DR. CONNELL: Thank you.

12 THE CHAIRMAN: Any further questions, Mr.  
13 Rodger?

14 MR. RODGER: Nothing further, Mr.  
15 Chairman. Thank you.

16 THE CHAIRMAN: Mr. Greenspoon?

17 MR. GREENSPOON: Thank you.

18 Mr. Chairman, I have one handout, I have  
19 given copies to Hydro and to Mr. Lucas.

20 The nature of my cross-examination will  
21 be dealing with the environmental impacts of the Plan,  
22 and I thought that if the Board would allow me or would  
23 give me some discretion, I would, so to speak, put our  
24 position on the table. I have photocopied a preface  
25 and a couple of pages from a publication that I think

1 does that.

2 [2:56 p.m.]

3 The reason I am proposing to do it this  
4 way is that it focuses my cross-examination on the  
5 aspects and the components of the plan that are  
6 important to my clients.

7 I don't propose to read the whole  
8 material. I just wish to ask the panel a couple of  
9 questions about some of the material contained therein.

10 THE CHAIRMAN: That has been done before.

11 MR. GREENSPOON: Yes.

12 THE CHAIRMAN: So I am not going to stop  
13 you from doing that.

14 MR. GREENSPOON: Thank you. This is a  
15 preface from a book --

16 THE CHAIRMAN: Perhaps we should give it  
17 a number?

18 THE REGISTRAR: 688.

19 MR. GREENSPOON: And it is a book called  
20 Beyond the Limits.

21 ---EXHIBIT NO. 688: Excerpts from book entitled:  
22 Beyond the Limits.

23 CROSS-EXAMINATION BY MR. GREENSPOON:

24 Q. Perhaps I could start, panel, these  
25 pages with the exception of the last page of this

1 exhibit are numbered in Roman numerals, and Roman  
2 numeral 13.

3 Perhaps I could ask the panel, first of  
4 all, on page 13 there are numbered in Arabic numerals  
5 1, 2 and 3 what is set out as the three conclusions or  
6 predictions of the book that was entitled: Limits to  
7 Growth, that was published 20 years ago.

8 I recall I was articling at the Canadian  
9 Environmental Law Association when this book came out,  
10 and I am wondering if any of the people on the panel  
11 remember or have read this book.

12 THE CHAIRMAN: That is the earlier book,  
13 Limits to Growth?

14 MR. GREENSPOON: Q. The earlier book,  
15 Limits to Growth.

16 Ms. Howes, you recall?

17 MS. HOWES: A. Yes.

18 Q. Just if we could look at the three  
19 conclusions.

20 Mr. Shalaby, were you about to give a  
21 positive response? I didn't mean to cut you --

22 MR. SHALABY: A. Yes, I was going to say  
23 I remember it, and I did read the book.

24 Q. Now, this book just by way of  
25 background is written by the same people using the same

1 computer model, a model known as World 3 although it  
2 was funded not by the Club of Rome which funded the  
3 first book. I understand the funding was a little bit  
4 different. It was again done at MIT.

5 Just quickly, then, if we could look at  
6 the three conclusions of 20 years ago, conclusion one:  
7 If the present growth trends in world population,  
8 industrialization, pollution, food production and  
9 resource depletion continue unchanged the limits to  
10 growth on this planet will be reached within the next  
11 100 years. The most probable result will be a sudden  
12 and uncontrollable decline in both population and  
13 industrial capacity.

14 They go on to say that: It is possible  
15 to alter these growth trends and to establish a  
16 condition of ecological and economic stability that is  
17 sustainable far into the future. The state of global  
18 equilibrium could be designed so that the basic  
19 material needs of each person on earth are satisfied  
20 and each person has an equal opportunity to realize his  
21 or her individual human potential.

22 Then they point out that: If we choose  
23 the second scenario rather than the first the sooner we  
24 begin working on it the greater will be our chances of  
25 success.



1 I would ask you then to look at the three  
2 conclusions that they have drawn this year, 1992, and  
3 they begin on Roman numeral 15. Just as a prelude to  
4 that the paragraph on the top of those three numbers  
5 says: As far as we can tell from the global data from  
6 the World 3 model and from all we have learned in the  
7 past 20 years the three conclusions we drew in the  
8 Limits to Growth are still valid but they need to be  
9 strengthened. Now we would write them this way.

10 Human use of many essential resources and  
11 generation of many kind of pollutants have already  
12 surpassed rates that are physically sustainable.  
13 Without significant reductions in material and energy  
14 flows there will be in the coming decades an  
15 uncontrolled decline in per capita food output, energy  
16 use, and industrial production.

17 This decline is not inevitable. To avoid  
18 it two changes are necessary. The first is a  
19 comprehensive revision of policies and practices that  
20 perpetuate growth in material consumption and  
21 population. The second is a rapid, drastic increase in  
22 the efficiency with which materials and energy are  
23 used.

24 A sustainable society is still  
25 technically and economically possible. It could be

1 much more desirable than a society that tries to solve  
2 its problems by constant expansion. The transition to  
3 a sustainable society requires a careful balance  
4 between long-term and short-term goals and an emphasis  
5 on sufficiency, equity and quality of life rather than  
6 on quantity of output.

7 It requires more than productivity and  
8 more than technology. It also requires maturity,  
9 compassion and wisdom.

10 I guess going back, Mr. Snelson, to the  
11 second point of the 1992 conclusions I would ask you to  
12 examine the third sentence where the authors are  
13 talking about the point that the decline is not  
14 inevitable and to avoid it two changes are necessary.  
15 The first is a comprehensive revision of policies and  
16 practices that perpetuate growth in material  
17 consumption and in population.

18 I am wondering how Ontario Hydro or if  
19 Ontario Hydro has taken that into account in its  
20 planning.

21 MR. SNELSON: A. I think there are some  
22 aspects of our plans which respond to the sorts of  
23 thoughts that are here. I wouldn't call them  
24 specifically responses to this recommendation in this  
25 report, but it talks about -- in that same conclusion

1       that you are referring to, it refers to requiring a  
2       drastic increase in the efficiency with which materials  
3       and energy are used, and clearly our emphasis on demand  
4       management and energy efficiency improvements is a move  
5       in that direction.

6                   Q.   All right.  If we just look back at  
7       Roman numeral page 15, I think your copies probably  
8       have my gratuitous underlining, and if you look part  
9       way up they are saying that the future to be viable at  
10      all--

11                   Do you have that, Mr. Snelson?

12                   A.   Yes.

13                   Q.   --must be one of drawing back, easing  
14      down and healing.  And then on page 17 they define what  
15      they mean by easing down just at the end:  We see  
16      easing down from unsustainability not as a sacrifice  
17      but as an opportunity to stop battering against the  
18      earth's limits and to start transcending self-imposed  
19      and unnecessary limits in human institutions, mindsets,  
20      beliefs and ethics.

21                   I guess when I look at -- and maybe  
22      before I ask the question about your forecasting for  
23      growth, I should point out or ask you to read the  
24      definition that is cited in this book on page Roman  
25      numeral 19 of the distinction, and if you do happen to

1 get a copy of this book and read it, they set out that  
2 this distinction between growth and development is the  
3 most important distinction that they make in the book,  
4 of course all leading towards what has come to be known  
5 as sustainable development.

6 I wonder if you could just have a look at  
7 what they say: To grow means to increase in size by  
8 the assimilation or accretion of materials. To develop  
9 means to expand or realize the potentialities of, to  
10 bring to a fuller, greater or better state.

11 When something grows it gets  
12 quantitatively bigger. When it develops it gets  
13 qualitatively better, or at least different.

14 Quantitative growth and qualitative  
15 improvement follow different laws. Our planet develops  
16 over time without growing. Our economy, a sub-system  
17 of a finite and non-growing earth, must eventually  
18 adapt to a similar pattern of development.

19 We think there is no more important  
20 distinction to keep straight than that one. It tells  
21 us that although there are limits to growth there need  
22 be no limits to development.

23 So when I look at your forecast, and even  
24 though we see a downturn in the forecast in the last  
25 couple of years, if you look at the Update, Exhibit

1 452, if you look on page 7, or even look at page 5 at  
2 the basic load forecast, it doesn't matter, or page 9,  
3 the primary load forecast, the forecast in the last  
4 couple of years is going down.

5 Yet, when we look to 2014 or 2017 we are  
6 back up with growing GDP, growing economic development,  
7 growing economic scenarios, more growth in fact, in  
8 your forecast.

9 A. The forecast was spoken to by Panel 1  
10 and the reasons for it. I don't know that I can add to  
11 that.

12 Q. Well, let's look at something, then.  
13 If we could go to Volume 8, which is Panel 1? Have you  
14 got it, Mr. Snelson, page 1521?

15 A. Sorry, what page?

16 Q. Page 1521. Again, like my friend Mr.  
17 Campbell, it is somewhat amazing to see such small  
18 numbers, but I guess that was last May, May the 6th.

19 I asked Mr. Burke, or Mr. Rothman, at  
20 line 7 -- and I was referring to another transcript,  
21 but I think the quote is found there. Mr. Rothman  
22 says: We don't -- or Mr. Campbell's question, Mr.  
23 Rothman's answer was:

24 "We don't forecast any radical breaks  
25 from past patterns of industrial



1 development and industrial output in the  
2 economy. That doesn't mean that we  
3 assume that all past trends simply  
4 continue, that whatever way the economy  
5 was going in the past, it will continue  
6 in that direction. We look at the  
7 reasons it has gone in certain directions  
8 in the past and try to forecast the  
9 future from that."

10 Now, I then asked him, I said:

11 "But it's very conservative, it's  
12 safe. You say it, you say, we don't  
13 forecast any radical breaks from past  
14 patterns of industrial development. So  
15 you have forecast a scenario of more of  
16 the same with a bandwidth, no  
17 consideration of a different alternative  
18 sustainable future for this province."

19 And his answer:

20 "We have not put any forecast deriving  
21 from an assumption of radical breaks  
22 which might or might not" - I guess there  
23 should be a 'be' in there - "might or  
24 might not be associated with a move  
25 toward sustainable development into the

1 forecast. That's not to say we haven't  
2 considered such possibilities. We  
3 haven't put them into the forecast."  
4 My question is: It would be fair to  
5 assume that you haven't put them into the forecast for  
6 Exhibit 452 either?

7 A. The load forecast update is the same  
8 load forecast as was discussed by Mr. Rothman and Mr.  
9 Burke, with the exceptions that Mr. Shalaby discussed  
10 in his direct evidence of updating for changes in  
11 electricity prices and changes in forecast of GDP. And  
12 so, I would conclude that there is no fundamental  
13 change in the nature of the forecast.

14 Q. Now, if we could turn to Exhibit 344,  
15 Appendix A.

16 Given your extensive recollection of the  
17 evidence, Mr. Chairman, I am afraid I am going to sound  
18 a lot like a broken record because I know I have asked  
19 these same questions at least twice before of different  
20 witnesses.

21 But on page A1 - Mr. Shalaby, it looks  
22 like you are the one who wants to answer this  
23 question - the quote under point --

24 At least, you have the exhibit in front  
25 of you.

1 MR. SHALABY: A. I remember you asking  
2 me a question on Appendix A before.

3 Q. Well, now we are at the planning  
4 point.

5 A. I am working hard to remember what my  
6 answer was so I don't give you any different.

7 Q. Well, I am going to try and change  
8 the question a little bit anyway.

9 Al, point 1, I just wanted to ask about  
10 that quote, and maybe before I ask that I don't think I  
11 have actually established either in my mind or in  
12 evidence why it is that the corporate environmental  
13 policy appears in the Alternative Energy exhibit? Do  
14 you know the answer to that question, Mr. Shalaby?

15 A. The Alternative Energy exhibit  
16 discusses the natural and environmental impacts and the  
17 social and environmental impacts of the various  
18 technologies and options. It is discussed in there.

19 And in view of the authors they wanted to  
20 give context to the environmental -- natural  
21 environmental impacts and the views that Hydro has on  
22 mitigation of those impacts.

23 Q. But not to say that these policies  
24 don't apply across the board to major supply options as  
25 well?

1                   A. Corporate policies apply across the  
2 board.

3                   Q. Across the board. All right.

4                   So the quotation that appears, the  
5 following governing principle:

6                   Ontario Hydro shall seek to manage all  
7 activities which affect the environment  
8 such that the Ontario community receives  
9 the greatest overall net benefit in the  
10 long term.

11 Do you want to address it, Ms. Howes? It doesn't  
12 matter to me.

13                   A. You haven't asked a question --

14                   THE CHAIRMAN: You have got to ask a  
15 question first. Mr. Shalaby has been, as he said  
16 yesterday, trained only to answer questions.  
17 [Laughter]

18                   MR. B. CAMPBELL: Would that they had  
19 paid attention to a few other lessons.

20                   MR. GREENSPOON: Q. I was struck by the  
21 similarity of that quotation with section 2 of the  
22 Environmental Assessment Act, and I guess my question  
23 is: Is there a distinction, or does Hydro have a  
24 position that this principle is in keeping or not in  
25 keeping with the purpose of the Environmental

1       Assessment Act? And I will read you the purpose of the  
2       Environmental Assessment Act:

3                   The purpose of this Act is the  
4                   betterment of the people of the whole or  
5                   any part of Ontario by providing for the  
6                   protection, conservation and wise  
7                   management in Ontario of the environment.

8                   MR. SHALABY: A. It is not identical  
9       language.

10                  Q. No, certainly. But it would be fair  
11       to say that it is not contradictory, that Hydro's  
12       policy is in keeping with the purpose of the  
13       Environmental Assessment Act?

14                  A. Without getting into legalities, I  
15       would accept that.

16                  Q. Of course.

17                  A. From my point of view they sound to  
18       be in keeping, yes.

19                  Q. And would it be fair then that when  
20       we read this governing principle of corporate policy  
21       that it would be fair to read it in the context of the  
22       Environmental Assessment Act, especially at this  
23       hearing - without getting into the legalities again?

24                  MR. B. CAMPBELL: Well, I'm not sure how  
25       you do this without getting into the legalities, Mr.



1 Chairman.

2 I don't know where my friend is going  
3 with this, but he is in essence in the end, I think,  
4 definitely discussing matters that are interpretations  
5 of statutes and application of statutes.

6 THE CHAIRMAN: Well, what point would you  
7 like to deal with, with these witnesses?

8 I mean, they have published their  
9 corporate and environmental policy principles and  
10 strategy, and for assistance they have put it in as an  
11 appendix to this study of Alternative Energy, and it  
12 has language has not dissimilar from the provisions of  
13 the Environmental Assessment Act.

14 I guess I really would like to know what  
15 your next question is.

16 MR. GREENSPOON: Get to the point, in  
17 other words?

18 THE CHAIRMAN: Yes. [Laughter]

19 MR. GREENSPOON: Q. Ontario Hydro shall  
20 manage all activities.

21 I guess the point I am wondering about,  
22 Mr. Shalaby or Ms. Howes, is this. The statute uses  
23 the words "protection", "conservation" and "wise  
24 management".

25 Does Ontario Hydro mean all of those

1 words when they say "manage all activities"? Do they  
2 mean the "protection", "conservation" and "wise  
3 management"?

4 MS. HOWES: A. I would say in a general  
5 sense, yes.

6 Q. Now, would you describe this  
7 environmental policy, this corporate environmental  
8 policy as inclusive or exclusive; that is, is it one  
9 that is applied first, or is it applied later in  
10 mitigation, or is it a fundamental policy that is  
11 applied when supply is being chosen?

12 [3:15 p.m.]

13 A. I am having difficulty with the  
14 question. My difficulty is the difference between  
15 inclusive and exclusive. Could you just repeat that  
16 part of the question?

17 Q. Well, do you choose your supply  
18 option and then decide how you are going to mitigate  
19 the environment, or do you look at the environment and  
20 choose your supply option? Which comes first at  
21 Ontario Hydro in planning?

22 A. I would probably say a bit of both.  
23 It is not one over the other or the other over the  
24 former.

25 Q. All right. Now, the question that I

1 asked of the other panels, I asked Dr. Effer and I  
2 think I asked Dr. Whillans, and that is in dot 2 on  
3 that same page we learned about a Green Paper that was  
4 to have been issued in 1991, and I only ask it now  
5 because it's a month later and I am wondering if there  
6 is any news on this Green Paper.

7 A. In that this is 1992 and the paper  
8 has not yet been produced, I am confident that it is  
9 not available and no progress has been made.

10 Q. Given that I asked this question  
11 first about three months ago and it appeared as though  
12 there were other some people besides myself that would  
13 be interested in seeing this, has there been any  
14 movement towards completing this document?

15 A. To my knowledge this paper is not  
16 completed, no.

17 Q. And is there is a continued movement  
18 towards completing it?

19 A. I think movement can be measured in  
20 big steps and little steps. I would say maybe little  
21 steps.

22 Q. I see. So it hasn't been a priority?

23 A. No.

24 Q. The three principles that are set out  
25 in Exhibit 344, elimination, reduction and dilution,

1 those are set out in order of preference, and these are  
2 Hydro's emission control principles, and they say that  
3 the first principle is elimination where they can,  
4 where practical.

5 I would like you to look at page 46 of  
6 the exhibit Beyond the Limits.

7 Mr. Campbell points out that his copy has  
8 the last two pages reversed, but it's page 46.

9 Now again I have underlined and marked,  
10 Herman Daly who is an economic at the Royal Bank has  
11 suggested three simple rules in defining sustainability  
12 with respect to throughput, which you know what that  
13 term means, Ms. Howes, throughput meaning that  
14 materials that we use in the economy?

15 A. Yes.

16 Q. And I guess we could look at them  
17 all, although I think with respect to the principles of  
18 emission control that are set out in Exhibit 344, I  
19 would like to focus on the middle one and the last one,  
20 and I guess as an example, let's use uranium as the  
21 non-renewable resource and let's use the same  
22 substitutions that he suggests. So just read that as:

23 The way you have a sustainable  
24 approach to a non-renewable resource,  
25 uranium, the sustainable use can be no

1 greater than the rate at which uranium  
2 used sustainably can be substituted for.  
3 For example, a uranium deposit would be  
4 used sustainable if part of the profits  
5 from it were systematically invested in  
6 solar collectors or in tree planting, so  
7 that when the uranium is gone, an  
8 equivalent stream of renewable energy is  
9 still available.

10 Does Ontario Hydro do that?

11 A. With respect to uranium?

12 Q. Or with respect to any non-renewable  
13 resource.

14 MR. SHALABY: A. We don't make profits  
15 on uranium. We actually make a lot of losses on  
16 uranium.

17 Q. Well, it seems to me you make a lot  
18 of losses on everything you do. You are \$30 billion in  
19 debt, Mr. Shalaby.

20 Perhaps we can remove the word  
21 "profit" because profit doesn't apply to a Crown  
22 Corporation.

23 A. I am just saying that the sentence as  
24 it reads doesn't apply to a user of the resource. It  
25 may apply to a developer of the resource, perhaps.



1 Q. Well, you agree that either directly  
2 or indirectly your use of uranium has an impact on the  
3 environment?

4 MS. HOWES: A. That's correct.

5 Q. Whether you buy it from Rio Algom or  
6 Denison or somebody out in Saskatchewan?

7 A. Agreed.

8 Q. Indirectly it impacts on the  
9 environment. All right.

10 You are the user of the uranium. We  
11 heard in Panel 9 that you contract with the refinery  
12 and you contract with the uranium mines and you are  
13 only taking responsibility when the fuel bundle that we  
14 had here last month goes into the reactor. But from  
15 the point of view of the impacts on the environment,  
16 when you use that uranium you are not planting trees or  
17 doing any of the things that are set out here to use  
18 the uranium in a sustainable way?

19 A. That's true, we are not planting  
20 trees, yes.

21 Q. And you are not making provision for  
22 alternative methods of supply so that when that uranium  
23 runs out or when that uranium ceases to be sustainable,  
24 that we have a renewable source?

25 A. I think though through this plan you

1 will see that we are endeavouring to use the - by the  
2 plan, I mean the Update - that we are endeavouring to  
3 use renewable resources which the basis for the  
4 Manitoba Purchase and the hydraulic plan. So I would  
5 say that there are some alternatives to uranium use  
6 which would be more in keeping with the principles  
7 evoked here.

8 Q. Lastly, let's go to the third  
9 principle, and let's talk about the tailings.

10 MR. SHALABY: A. We are also proposing  
11 to make investments in renewable energies in the form  
12 of hydraulic.

13 Q. Okay. I have some questions about  
14 the hydraulic impacts later in my cross-examination. I  
15 think you make a good point, Ms. Howes, and I  
16 understand what you are saying.

17 I just want to deal with the relationship  
18 of sustainability and uranium and impacts. Let's talk  
19 about the tailings, and you know what the tailings are,  
20 I am talking the uranium tailings--

21 MS. HOWES: A. Yes.

22 Q. --particularly at Elliot Lake.

23 And for the purpose this question, for a  
24 pollutant that's sustainable and let's say for the  
25 radioactive tailings, the sustainable rate of emission

1 can be no greater than the rate at which the  
2 radioactive emissions can be recycled, absorbed or  
3 rendered harmless by the environment.

4 Now, you weren't here for Panel 1, but my  
5 understanding of the Corporate position on the tailings  
6 is they take no responsibility financially for the  
7 tailings.

8 A. They being Ontario Hydro?

9 Q. Yes. That may be an  
10 oversimplification because there appeared to be one  
11 qualification of one mine, Stanleigh Mine, but with  
12 that exception, Hydro's stated position in Panel 9 was  
13 we buy the uranium, we contract it, and we assume that  
14 the mining company follows the legislation?

15 A. Well, absolutely. The company is a  
16 highly regulated industry. We would not be buying from  
17 a company that did not adhere to the regulations.

18 I am sure as you have heard before the  
19 prices that we pay for uranium, those prices reflect  
20 additional costs of meeting environmental regulations,  
21 worker health and safety, et cetera. So I would say  
22 that constitutes a financial investment in management  
23 of the tailings.

24 Q. Yes. And, in fact, we heard about  
25 the pre-engineering impact that the moratorium had, in

1 fact that \$240 million, a lot of that went directly to  
2 of Elliot Lake, didn't it?

3 A. I have no knowledge of that.

4 Q. Maybe I can ask about that later.

5 Just getting back to, regardless of who  
6 has got the responsibility, again you would agree that  
7 at least an indirect impact of generating nuclear  
8 electricity has been the tailings in Elliot Lake?

9 A. With the proviso, of course, that the  
10 uranium was purchased in Elliot Lake.

11 Q. Yes. And with the proviso - maybe I  
12 can anticipate what Mr. Dalziel is saying - that you  
13 didn't buy it all?

14 A. That's not what I said, but yes, that  
15 is a point.

16 Q. All right. So in your planning at  
17 Ontario Hydro, and I am only using, again, uranium as  
18 an example, how have you taken that principle into  
19 account?

20 A. This particular principle?

21 Q. Yes, that particular principle.

22 A. In my direct evidence I made some  
23 mention of carrying capacity, the ability of the  
24 environment to essentially address this, to be able to  
25 respond to environmental effects, and really it's a

1 balance. I would say that our mitigation measures that  
2 are proposed to manage, in this case, the effects of  
3 our operations, air emissions, et cetera, goes a long  
4 way to try and reduce the effect of our operations on  
5 the environment.

6 Q. But if just hypothetically, if the  
7 Serpent River basin has reached its carrying capacity  
8 or far exceeded it, there is nothing Ontario Hydro can  
9 do about it.

10 A. That's probably true.

11 Q. But it may be a burden on the people  
12 of the Province of Ontario.

13 A. It could well be.

14 Q. And Ontario Hydro or you, as a  
15 planner, do not take that into consideration, at least  
16 directly with respect to uranium tailings?

17 A. No, I wouldn't agree. One of the  
18 items that was identified in the environmental analysis  
19 for example, Exhibit 4, there was a fair amount or  
20 there was some consideration of uranium tailings in  
21 there, the amount of uranium tailings waste that would  
22 be generated by each of the plants.

23 Q. But as I recall, the only  
24 environmental impact, and I don't have the exhibit with  
25 me, that was indicated - I think it was appendix D of



1 Exhibit 4 - was on land use. They didn't talk about  
2 tailings impacts on the water or on the air. It was  
3 just a number of hectares that were going to be taken  
4 out.

5 A. That's right, it was the number of  
6 hectares.

7 Q. Okay. We can leave those exhibits  
8 now.

9 Mr. Snelson, turning to Volume 29.  
10 Maybe this would be a good point to  
11 break, it's 3:30, Mr. Chairman.

12 THE CHAIRMAN: Fine. We will break for  
13 15 minutes.

14 THE REGISTRAR: Please come to order.  
15 This hearing will recess for 15 minutes.

16 ---Recess at 3:30 p.m.

17 ---On resuming at 3:50 p.m.

18 THE REGISTRAR: Please come to order.  
19 This hearing is again in session. Be seated, please.

20 THE CHAIRMAN: Mr. Greenspoon?

21 MR. GREENSPOON: Thank you, Mr. Chairman.

22 Q. Now, Mr. Snelson, just before the  
23 break, I referred to you Volume 29, at page 4990, line  
24 21, Mr. Howard was asking you, you had just I think as  
25 I recall, just begun to outline the costing concepts in

1 that panel, and talking about avoided cost and some of  
2 the costing evaluation methodology. Then at line 21  
3 Mr. Howard asked you, that in that panel:

4 "While we are going to be dealing with  
5 costing primarily, is costing the only  
6 criteria which is used at Ontario Hydro  
7 when comparing options?

8 And your answer: "No. There are several  
9 other criteria which are used in  
10 comparing options in plans, and these  
11 other criteria are important. They  
12 include such things environmental  
13 comparisons, safety, social acceptance,  
14 reliability, technical soundness,  
15 flexibility, and they will be addressed  
16 in subsequent panels."

17 And then later on line 12, Mr. Howard  
18 asks to give him an example of where you will use these  
19 other criteria and you say, for example, on line 19:

20 "For example, the safety considerations  
21 of nuclear power will be discussed if  
22 Panel 9; Panel 8 will discuss the  
23 reliability estimate of fossil plants,  
24 and so on, as we go through each of the  
25 option and plan assessment panels."

1 Just so I am clear, this is the panel  
2 where we compare the options and those criteria that  
3 you have set out at the top of page 4991; is that  
4 correct?

5 MR. SNELSON: A. Yes.

6 Q. And those are environmental  
7 comparisons for one and that's the one that I want to  
8 focus on today.

9 A. Yes.

10 Q. And without going into the reasons,  
11 would you agree with me that Hydro has made the  
12 decision that these environmental comparisons will not  
13 be done on the basis of cost?

14 A. The environmental comparisons are  
15 done on the basis of environmental factors.

16 Q. Yes. And not on the basis of cost?

17 A. The cost comparisons are done on the  
18 basis of cost. The question seems to mix terms. I  
19 don't understand it.

20 THE CHAIRMAN: Are you suggesting that,  
21 as has been said on many panels, that the externalities  
22 so-called are not included in Hydro's analysis?

23 MR. GREENSPOON: Q. Yes. I just wanted  
24 you to basically restate that.

25 MR. SNELSON: A. Yes, the environmental

1 effects have not been estimated in some way as  
2 equivalent monetary values and then dealt with in that  
3 way.

4 Q. As I understand your evidence later  
5 in that panel, your evidence was that that gave Hydro  
6 more flexibility - not more flexibility in the  
7 electricity sense - but more flexibility in general  
8 sense, to evaluate those environmental impacts on a  
9 case-by-case basis.

10 THE CHAIRMAN: Now, the reason why Hydro  
11 doesn't quantify in monetary terms environmental  
12 factors has been gone into many, many, times. Now, if  
13 you want Mr. Snelson to summarize if he can, that will  
14 be fine. But that's been covered pretty thoroughly  
15 before.

16 If you want him just to focus on this  
17 panel to summarize, but there is a number, as I recall  
18 there are five or six reasons why Hydro doesn't put a  
19 dollar sign on these matters.

20 MR. GREENSPOON: Yes. You are right.  
21 They enunciate six reasons.

22 Q. I don't want to go back into but I am  
23 just wondering if that is the case. If you can't  
24 answer in --

25 MR. SNELSON: A. I could repeat my Panel

1 3 testimony.

2 Q. No.

3 A. But nothing has changed in that  
4 respect since then.

5 Q. Then if we look at Exhibit 682, page  
6 1, these are the overheads. My question is, how are  
7 these environmental comparisons that you talked about  
8 in the costing panel reflected in these priority  
9 strategic directions?

10 [3:56 p.m.]

11 A. I think we have indicated that some  
12 of the reasons for these priorities have environmental  
13 factors associated with them.

14 Q. All right. Would it be fair to say  
15 that if we turn to page 16 of the overheads that that  
16 sets out the underlying criteria for the priority  
17 strategic directions?

18 A. They are the planning criteria which  
19 are used. They are from the demand/supply planning  
20 strategy.

21 Q. So they relate directly to the  
22 priority strategic directions on page 1?

23 A. The priority strategy directions is a  
24 broad summary of the whole of the strategy. These are  
25 the criteria which are part of the strategy.



1 Q. But when you look at page 1 you don't  
2 see anything about environmental impacts. In other  
3 words, Ontario Hydro has not set out a priority  
4 strategic direction reflecting, for example, the  
5 corporate policy on maintaining the environment?

6 MS. HOWES: A. I think, though, if you  
7 looked at the first one, maintain and improve the  
8 existing and committed facilities, you could certainly  
9 interpret in that particular one that we are looking  
10 for continuous improvement in emission rates, waste  
11 production at our facilities.

12 So I think, as Mr. Snelson has previously  
13 stated, that underlying many of these strategic  
14 elements or strategic directions there are some  
15 environmental characteristics.

16 Q. But for whatever value it might  
17 serve, rather than the implicitness about what you are  
18 talking about, it doesn't appear; it is not set out as  
19 a strategic direction on that page or in Exhibit 74?

20 MR. SHALABY: A. Those are meant to be,  
21 as Mr. Snelson said, a summary of what the strategy  
22 means in terms of planning demand and supply options.

23 The strategy is sort of 100 pages of  
24 rationale and reasons and planning criteria. In a  
25 nutshell, all of that means we will maintain the

1 existing system and pursue demand management and so on.

2 So this is not a statement of  
3 environmental protection or employee relations or  
4 anything else. This is just saying that this is what  
5 we are going to do in the area of demand and supply  
6 planning.

7 Q. But, for example, a statement could  
8 have appeared in the priority strategic directions that  
9 said Ontario Hydro will provide for the protection,  
10 conservation and wise management in Ontario of the  
11 environment in all of its planning.

12 A. Well, keep in mind that this is a  
13 demand/supply planning.

14 Q. Yes.

15 A. It was meant to be giving direction  
16 to the putting together of demand and supply plans.  
17 You have just read to us, from other exhibits, Hydro's  
18 corporate policy on the environment, and that is the  
19 place where such statements appear.

20 MS. HOWES: A. And that policy would  
21 apply to all of Hydro's activities whether it is  
22 planning or whether it is operation of its facilities.  
23 So whether it is written here or not it would still  
24 apply to a planning --

25 Q. So we can take that as a priority in

1 strategic planning?

2 A. It is one of Hydro's corporate  
3 policies.

4 Q. Yes, we could take that. We could  
5 write that in even though it is not there, with the  
6 caveat as Mr. Shalaby said that it may not apply  
7 directly to supply itself?

8 MR. SNELSON: A. You might have to write  
9 in a number of others things such as the commitment to  
10 safety of employees and the public. There is a whole  
11 host of things that go into this. These things are  
12 structured. This priority strategic direction, as Mr.  
13 Shalaby has said, is structured around selecting demand  
14 and supply options, and so it is essentially a priority  
15 list of demand and supply options.

16 The first one relates to the existing  
17 system. The second one relates to demand management.  
18 The third one relates to non-utility generation. These  
19 are all the demand and supply options, and it gives  
20 their priority.

21 I said in my direct evidence that the  
22 reasons, for instance, for giving a high priority to  
23 economic demand management options is because they are  
24 preferable from environmental perspectives. So  
25 environment is a factor in selecting these priority

1 strategic directions.

2 Q. Just turning to page 16, then, I  
3 wanted to talk about, ask, Ms. Howes, the fourth bullet  
4 on 1.7 and the fourth bullet on 1.8, and I gather from  
5 your evidence that environmental requirements and  
6 standards are the legislative things that you talked  
7 about in your evidence. These are the regulations?

8 MS. HOWES: A. That's right, as well as  
9 the things that Ontario Hydro -- the standards Ontario  
10 Hydro imposes on itself when there are no regulations.

11 MR. GREENSPOON: And I only wish to point  
12 this out, Mr. Chairman, because certainly, I had  
13 expected it would have helped me in this  
14 cross-examination.

15 In Volume 112, page 19551, Ontario  
16 Hydro -- I'm sorry, page 19516, Ontario Hydro undertook  
17 by Undertaking 478.14 to provide me with all of the  
18 control orders - this was in Panel 8 - all of the  
19 control orders and the list of regulations specific to  
20 Ontario Hydro under the Environmental Protection Act.

21 I haven't got that, and just to remind  
22 you what those are, those are instances where by  
23 regulation or control order Ontario Hydro has been  
24 exempted from the Environmental Protection Act.

25 I wanted to be able to cross-examine on

1 the environmental impacts of those control orders and  
2 especially in comparing options, and I don't have that  
3 material.

4 MR. B. CAMPBELL: It is --

5 MR. GREENSPOON: February 24th, 1992.

6 MR. B. CAMPBELL: Our records show it as  
7 being filed April 9th.

8 THE CHAIRMAN: Well, you have to check  
9 into that somehow.

10 MR. GREENSPOON: I would have thought it  
11 might have come to me in that it was an undertaking.

12 THE CHAIRMAN: Yes.

13 MR. B. CAMPBELL: Yes, I quite agree. I  
14 also would have thought that if it was critical for  
15 your cross-examination we might have been reminded  
16 about it before right now.

17 MR. GREENSPOON: Yes. Well, that's a  
18 fair comment.

19 Q. In any case, Ms. Howes, Ontario Hydro  
20 is subject to several control orders?

21 MS. HOWES: A. Yes.

22 Q. And do you agree with the statement  
23 that I just made, that a control order in essence is an  
24 exemption under the Environmental Protection Act?

25 A. Yes. There are usually conditions.



1 Q. It allows you to do something that  
2 you normally wouldn't be allowed to do with respect to  
3 the environment?

4 A. Yes, but it is under quite strict  
5 control by Ministry of the Environment.

6 Q. All right. Now, in its planning did  
7 Ontario Hydro take into consideration or plan to phase  
8 these control orders out?

9 THE CHAIRMAN: I don't know whether they  
10 can talk about these in general terms.

11 MR. GREENSPOON: Q. Well, is it a  
12 strategy of Ontario Hydro in its environmental policy,  
13 in planning, to take the position that where there is a  
14 control order the ideal mitigation with respect to the  
15 environment would be to not need the control order  
16 anymore?

17 MS. HOWES: A. I would agree.

18 Q. And how has that been taken into  
19 account in planning?

20 A. I would have to look at the specific  
21 control orders. I mean, it is fine to talk about it on  
22 a general level, but I would have to look at specific  
23 control orders.

24 Q. All right. Assuming the undertaking  
25 has been filed, I wonder if you could look at the

1 response to the undertaking and perhaps get back to me  
2 how Ontario Hydro has looked at those control orders  
3 from a planning perspective with the idea of  
4 eliminating them?

5 Is that possible, to get an undertaking  
6 on that? Do you think you can do that, Ms. Howes?

7 THE CHAIRMAN: I think she said she  
8 could. She said she could. So I guess we better give  
9 it a number. That is obviously the simplest way.

10 THE REGISTRAR: 684.15.

11 ---UNDERTAKING NO. 684.15: Ontario Hydro undertakes to  
12 investigate response to Undertaking  
478.14.

13 THE CHAIRMAN: Does anyone have any idea  
14 how many there are? Dr. Connell just --

15 MS. HOWES: That is a good point. I have  
16 no idea what I am getting into by agreeing to do this.

17 THE CHAIRMAN: I was surprised when you  
18 gave the answer so gratuitously, as a matter of fact, I  
19 thought you would want to have a look at it first.

20 MS. HOWES: Well, that was going to be  
21 the part where I was opening my mouth to say: But I  
22 would like to look at it first before...

23 MR. GREENSPOON: Well, if you want to  
24 make it a conditional undertaking and get back to me,  
25 that's fine. If they can't answer it, they can't

1 answer it, Mr. Chairman. I am not going to demand --

2 MR. B. CAMPBELL: Well, we will dig out  
3 the answer to the previous undertaking. Ms. Howes will  
4 look at it overnight. We will come back, and I will  
5 get some advice on what can or can't be done.

6 I would also like to consider the  
7 question of whether -- I think you have characterized a  
8 control order as an exemption to be gotten rid of or  
9 some terms in those effects. I am not quite sure that  
10 from a legal perspective that I would agree with the  
11 characterization of them as an exemption. But perhaps  
12 I am being unduly picky.

13 THE CHAIRMAN: Well, I don't know  
14 anything about it and I shouldn't even volunteer, but  
15 it may be that a control order is trying to deal with a  
16 special situation that general legislation doesn't  
17 cover, but one would expect that those administering  
18 the legislation would try and administer it  
19 consistently with the general legislation.

20 But that is gratuitous advice. I don't  
21 know enough about the legislation to really say much  
22 more than that.

23 MR. GREENSPOON: Well, it is a chicken  
24 and egg situation because I don't have the control  
25 orders. I don't know if there is 100 or 10. I know

1 that some of them are going to specifically deal with  
2 SO(2). I think those are the ones that I was most  
3 particularly interested in.

4 MS. HOWES: So you would like me to  
5 specifically focus on those that are dealing with  
6 SO(2)?

7 MR. GREENSPOON: Q. Well, no. I don't  
8 want to limit it to that. I would like to see the list  
9 and perhaps we could correspond on what information you  
10 can give me on all of them.

11 MS. HOWES: A. From a planning context?

12 MR. GREENSPOON: Q. From a planning  
13 context.

14 And I guess you could also get back to me  
15 in the same undertaking, Ms. Howes, on that principle,  
16 is it in fact a principle of Ontario Hydro, a planning  
17 principle, that it is a direction that Ontario Hydro  
18 sees as positive, and that is, to have no control  
19 orders sometime down in the future, that they would not  
20 need control orders to allow emissions for supply?

21 A. I would guess that was more an  
22 operational issue than a planning issue.

23 Q. All right. Now, dealing with the  
24 first priority, Mr. Snelson, maintain and improve the  
25 existing and committed facilities, I take it that what

1 you are talking about there, when you say maintain you  
2 are talking about, obviously, fueling; as Ms. Howes  
3 indicated, perhaps putting scrubbers, that would be  
4 improving on a fossil.

5 I guess the question relating to the  
6 materials that I have already filed is: When you say  
7 improving the existing and committed facilities, do you  
8 necessarily mean making them larger?

9 MR. SNELSON: A. No.

10 Q. And, in fact, when we talk  
11 particularly about the transmission system that may not  
12 be the best way to go? And what I mean by that is it  
13 isn't necessarily an improvement of the transmission  
14 system to make it larger?

15 A. I think we have to get our terms  
16 perhaps clear here. We would consider building a new  
17 transmission line to add to the existing system to be  
18 new facilities and not part of this maintaining and  
19 improving the existing and committed facilities. That  
20 would be new facilities.

21 Q. All right. What would you call  
22 radial transmission?

23 A. New facilities.

24 Q. What is the northeast --

25 A. Assuming it is associated with a new



1 generating plant; it is not something that already  
2 exists.

3 Q. What if it is associated with an  
4 existing user for the purpose of cogeneration?

5 A. I'm sorry, I don't understand  
6 quite --

7 Q. If you needed more radial  
8 transmission to get you to a non-utility generator that  
9 was going to produce some electricity rather than  
10 consume it and you didn't have enough capacity on the  
11 line that went to him.

12 A. If we had to build a new line that is  
13 new facilities.

14 Q. Again, it is a new facility? All  
15 right.

16 So that principle, then, of what I would  
17 call in my mind improving the existing system by  
18 encouraging cogeneration would in fact fall under the  
19 third point: encourage non-utility generation?

20 A. Encouraging cogeneration from people  
21 who don't presently cogenerate would be part of the  
22 non-utility generation thrust, yes.

23 Q. And that would include upgrading the  
24 system?

25 A. There may be transmission upgrades

1 that are required associated with that.

2 Q. And the second point on your  
3 strategic direction is demand management, and since we  
4 were here on Panel 4 Ontario Hydro has undertaken the  
5 52-watt light bulb program.

6 Mr. Shalaby, are you the...?

7 MR. SHALABY: A. That's correct.

8 Q. Did that meet its targets, or is it  
9 impossible to tell?

10 A. I think we have an interrogatory  
11 response that describes the evaluation of that program.

12 Q. I guess it just struck me as -- what  
13 I wanted to know was, could it be said that there is  
14 any relationship between the not meeting of the targets  
15 in the residential sector and programs like that?

16 For example, I will put to you the  
17 proposition that if there is a place in a home -- and  
18 you sent these 52-watt light bulbs out to every  
19 residence in Ontario, I understand. If there is a  
20 place in a home for an energy efficient light bulb if  
21 that place is taken up by a 52-watt bulb as opposed to  
22 a compact fluorescent you have lost some demand  
23 management?

24 A. Yes.

25 Q. And have you evaluated that?

1                   A. I think the intent of that program  
2 was to raise the awareness of the Ontario consumer of  
3 the availability of energy efficient products. The  
4 expectation is when they see one product they will go  
5 and seek more and perhaps more efficient products as  
6 well.

7                   Q. I don't want to belabour the point  
8 because we dealt with this all in Panel 4.

9                   A. Yes.

10                  Q. Is there an explanation for the  
11 target not being met in the residential, given that it  
12 was exceeded in industrial?

13                  A. Without knowing the details I think  
14 the economic downturn, the low housing starts,  
15 generally the bad economic conditions could hamper the  
16 energy efficiency, particularly in new housing. The  
17 targets would not be achieved in new housing.

18                  Q. And do you know that that is where it  
19 wasn't achieved?

20                  A. I don't know for sure. I am just  
21 speculating.

22                  Q. You are guessing?

23                  A. Yes.

24                  Q. It is probably a good guess. This is  
25 what you do, isn't it? Isn't demand management

1 something that as a planner - I know you are not a  
2 demand management expert, but as a planner you have to  
3 keep your finger on, I guess I want to know how  
4 educated a guess it is.

5 A. I could find more details for you.  
6 But, for example, in the residential sector we have a  
7 program on the R2000 homes. We all know that housing  
8 starts are much, much lower than expected a couple of  
9 years ago, and if there are no housing starts there are  
10 much fewer R2000 homes. I don't think it takes too  
11 much to figure out that lower housing starts reduce the  
12 potential for residential savings.

13 Q. But that would be new load, wouldn't  
14 it?

15 A. Yes. And demand management applies  
16 both to new and to retrofit.

17 [4:15 p.m.]

18 Q. So just going to the industrial  
19 sector, it would be fair to say that in fact the  
20 industrial sector exceeded its projections, and if you  
21 take into account that they didn't go for some of the  
22 programs at all, like load displacement or time-of-use,  
23 some of the programs that you thought might work didn't  
24 work, they obviously latched on to other programs even  
25 more than you expected.

1 A. Yes.

2 Q. Why is it? Have you done a planning  
3 analysis why it is that the industrial sector was more  
4 successful at demand management than the residential  
5 sector?

6 A. I don't have such an analysis at my  
7 finger tips. But I assume people who run these  
8 programs and people who monitor the results would ask  
9 themselves those questions and would understand the  
10 reasons for overachievement in certain programs and  
11 underachievement in others.

12 Q. I guess from my client's point of  
13 view, we would rather focus rather than on making this  
14 a megawatt hearing, we would like to focus on the  
15 conservation aspects. And to us it is important to  
16 both positively and negatively look critically at how  
17 you are meeting and you are planning to meet these  
18 demand management targets. So that information is  
19 important to us.

20 Maybe I will give you another example,  
21 another postulation, Mr. Shalaby, and that is, could it  
22 be that the industrial sector is closer tied to the  
23 economics of demand management than the residential  
24 sector?

25 A. Is more closely tied?



1 Q. More savvy, more aware of the  
2 economic benefits than the public?

3 A. There are various industries that  
4 have full-time energy managers for example, people who  
5 administer the energy business in the plant, so  
6 definitely there are industries that are much more  
7 aware of energy economics than the average consumer,  
8 yes.

9 Q. And they have bigger bills so they  
10 have more to save, that's another factor.

11 A. Yes.

12 Q. And I take it that your answer to Mr.  
13 Rodger was that, yes, we did lose some programs, we did  
14 lose some - or maybe it was to Mr. Mark - you didn't  
15 meet some targets in the industrial sector. But that's  
16 why you have the large menu, as you describe it,  
17 because where you don't meet them you can adjust them  
18 and you can learn from your customer what he wants.

19 A. I think I would accept that.

20 Q. You didn't see that as a negative  
21 thing in 1992 that you necessarily didn't meet some of  
22 your targets in specific programs?

23 A. We would much rather have met all of  
24 our targets, but learning how to achieve them the year  
25 after or that or the year after that is also a positive

1 indication, yes.

2 Q. Would it not be fair to say that you  
3 should apply that same reasoning across the sector and  
4 apply some of your successes in the industrial sector  
5 and your planning in the residential sector?

6 A. I assume that is being. Done to the  
7 extent of the nature of the market sector is different,  
8 some things cannot work, but whatever can work from one  
9 segment to another, if there is a success story  
10 discovered, it will be passed on to other sectors, I am  
11 sure.

12 Q. And would it be fair to say, to  
13 comment that perhaps the demand management program in  
14 the residential sector is not aggressive enough?

15 A. No, I wouldn't think so. We  
16 indicated in Panel 4 and continue to indicate that the  
17 residential sector is going to be one of the toughest  
18 sectors to achieve conservation, because there are  
19 many, many decision-makers, they are much more  
20 distributed, and as you just indicated, they are not as  
21 well aware of the energy savings opportunities, and  
22 many of them don't have as big an incentive as  
23 commercial buildings or large industrial outfits to do  
24 conservation. So I think we recognized all along that  
25 the residential market sector is a tough market.

1                   Q. All right. Now, I have heard you at  
2                   least twice at these hearings give evidence that when  
3                   you talk about economic and non-economic NUGs or demand  
4                   management, that you don't feel there is a large band  
5                   of non-economic demand management just below the total  
6                   customer cost test or whatever your test is.

7                   A. For demand management I agree, for  
8                   NUGs I don't.

9                   Q. For NUGs you don't, all right.

10                  A. I don't think we stated that for  
11                  NUGs.

12                  Q. All right. So that principle only  
13                  applies to demand management?

14                  A. For demand management, many demand  
15                  management options are well below avoided cost or close  
16                  to avoided cost. There are not that many that are well  
17                  above avoided cost.

18                  Q. Now, I asked this question of Panel 5  
19                  and they seem to categorize photovoltaics or at least  
20                  solar water heaters as demand management.

21                  Residentially, how does Hydro  
22                  characterize photovoltaics?

23                  A. You mentioned photovoltaics and solar  
24                  water heater?

25                  Q. Yes. If you could deal with them

1 each.

2 A. I think solar water heaters could be  
3 classified as a demand management option and we dealt  
4 with it on Panel 4.

5 Photovoltaics has got characteristics  
6 that are partly an option that generates electricity  
7 but that electricity is to save demand from the grid.  
8 So it is similar to a load displacement non-utility  
9 generation, but that would be the closest  
10 categorization I could put it to you.

11 Q. So it could be a hybrid?

12 A. Yes.

13 Q. And it would be an example, you would  
14 agree, that from a large perspective it would be fair  
15 to say that a photovoltaic on a residence could be  
16 called demand management? If the person didn't want to  
17 sell any electricity back to Ontario Hydro, he would be  
18 managing his demand.

19 MR. SNELSON: A. I think in the  
20 categories that we have used, that circumstance is a  
21 small load displacement non-utility generator, as Mr.  
22 Shalaby has indicated. That's how we would  
23 characterize it. It would have the effect of reducing  
24 his demand and that's what load displacement  
25 non-utility generation does.

1 Q. All right. then the principle that  
2 you just enunciated for demand management, that is the  
3 threshold principle, that there is nothing at the  
4 threshold, would not necessarily -- or not a lot at the  
5 threshold, would not necessarily apply to load  
6 displacement non-utility generation, that is  
7 specifically photovoltaic?

8 MR. SHALABY: A. You are quite right.

9 Q. So that we could, in the future in  
10 Ontario, see a lot of economic load displacement by  
11 photovoltaics?

12 A. We could.

13 Q. Universally in Ontario?

14 A. Yes.

15 Q. In fact, in the alternatives panel  
16 you talked about a breakthrough and you said the thing  
17 about a breakthrough is nobody knows it is going to  
18 happen.

19 A. Yes.

20 Q. And I think you pointed out that  
21 photovoltaics was one of the areas we might see that.

22 A. Yes.

23 Q. And you would agree with me, just to  
24 remind us of the evidence, in 1970 photovoltaics were  
25 about \$150 a watt?



1                   A. Big number. Whether it's 150 or a  
2 100, it's in Exhibit 344.

3                   Q. And in 1990 they are about \$5 a watt?

4                   A. That's about right, yes.

5                   Q. And if they were to go down by a  
6 factor of three or four, not only would they be a good  
7 load displacement on a house but they would be cheaper  
8 than coal or nuclear without even counting the  
9 environmental externalities?

10                  A. I don't know whether I would accept  
11 that without a little bit of calculation.

12                  Q. All right. Maybe you could make that  
13 calculation?

14                  A. What is the point in that?

15                  Q. Well, the point --

16                  MR. B. CAMPBELL: I'm sorry. You asked  
17 for an undertaking, counsel give undertakings except  
18 when they keep quiet and let the witnesses wonder where  
19 they will.

20                  In my submission, these costs have  
21 already been dealt with, Exhibit 344 sets out a cost  
22 basis, they have got cost figures for all of the other  
23 options, surely my friend has all the information over  
24 several panels that he needs to make in terms of a cost  
25 comparison, if it isn't already contained in Exhibit

1 344.

2 MR. GREENSPOON: Mr. Chairman, what I am  
3 putting to this witness is that if photovoltaics come  
4 down in price by a factor of three or four, here we  
5 have an option to provide electricity to Ontario that  
6 is cheaper than coal or nuclear, a supply option.  
7 That's what we are here for in Panel 10, is to compare  
8 options.

9 I don't think it matters whether we have  
10 got the evidence out before and we can calculate what  
11 this is. My understanding all through this hearing was  
12 Panel 10 is here to compare options and I am putting a  
13 hypothetical option to the panel.

14 THE CHAIRMAN: You put the hypothetical,  
15 I think Mr. Shalaby said he is not prepared to say that  
16 reducing it by that order of magnitude would put it  
17 below.

18 Is that right?

19 MR. GREENSPOON: Without a calculation.

20 THE CHAIRMAN: No.

21 MR. SHALABY: Yes, I said without a  
22 calculation.

23 I could draw your attention to some  
24 conclusions in Exhibit 344 that show three scenarios  
25 for solar photovoltaics, and scenario No. 2, I am

1 quoting from page 38 of Exhibit 344, it says if capital  
2 cost is between \$1 and \$2 per watt by the year 2000,  
3 the potential continues to be very small by the year  
4 2005.

5 The next scenario, scenario 3, says  
6 improvement in technology, improvement in manufacturing  
7 costs resulting in capital costs of less than \$1 per  
8 watt, and we see here a more significant potential  
9 materializing by the year 2014.

10 So when you say it's \$5 and it goes down  
11 by a factor of three or four, if it's between \$1 and \$2  
12 we still don't think it would make the breakthrough.  
13 If it is below \$1 perhaps it would have a more  
14 significant penetration at that time.

15 MR. GREENSPOON: Q. That's based on the  
16 avoided cost plus 10 per cent formula?

17 MR. SHALABY: A. That's correct.

18 Now the other thing, of course, that we  
19 repeated all along is that options such as solar do not  
20 play the same role or cannot displace the other options  
21 that you mentioned, fossil and nuclear. They don't  
22 operate around the clock like other options might or  
23 different hours of the day like different options  
24 might. You will still need backup. And we made that  
25 comment over and over, that one doesn't necessarily

1       displace the other but they work together, you need  
2       both if they do materialize.

3               Q. Of course that may apply to the  
4       existing system, but that may or may not apply to what  
5       we need in 2009, because as you have said, we don't  
6       know?

7               A. It does apply in 2009 as well. You  
8       need options that run at night and you need options  
9       that run when there are cloud covers and things like.

10              Q. Wind runs at night, Mr. Shalaby.

11              A. We were talking about solar  
12       photovoltaic. Wind runs at night, yes.

13              Q. So alternative options can run at  
14       night. Biomass can run at night.

15              A. Yes.

16              Q. Okay. So when it comes to 2009 we  
17       don't know what we are going to need in terms of  
18       megawatts.

19              THE CHAIRMAN: I am not sure I understand  
20       that question. There is a forecast about what they  
21       think they are going to need. How that is filled is  
22       another matter.

23              MR. GREENSPOON: All right. Well,  
24       perhaps I will leave that for a moment.

25              Q. Moving on to non-utility generation.

1 We understand, I don't know if this is Mr. Snelson, we  
2 understand that there is 1,000 megawatts of potential  
3 both for load displacement and non-utility generation  
4 in the pulp and paper sector alone in Ontario.

5 MR. SNELSON: A. That's the sort of  
6 number that Mr. Brown or Mr. Vydrostko would have been  
7 familiar with on Panel 5. It doesn't sound surprising  
8 to me but I can't confirm specifically that number.

9 Q. All right. And just looking at the  
10 Update, Exhibit 452, page 22, and what my clients are  
11 concerned about, if there is 1,000 megawatts of  
12 cogeneration at the pulp and paper sector, and most  
13 that will be in Northern Ontario, the middle paragraph  
14 talking about the surplus states that:

15 If the surplus were to materialize  
16 there would be adverse rate impacts for  
17 customers as a result of paying for the  
18 costs of non-utility generation that is  
19 not required.

20 So even though it's a strategic policy  
21 decision, it appears to us as though there is a cap on  
22 the non-utility generation in this province now.

23 A. I don't think there is a cap but we  
24 definitely have taken steps to slow down the  
25 non-utility generation program, to try to refocus it



1 more on high-efficiency cogeneration and renewable  
2 non-utility generation, to better match the needs of  
3 the system.

4 Q. Well, assuming that my number is  
5 right, for 1,000, pulp and paper is going to meet those  
6 tests by and large, would you agree with that?

7 A. It depends on how the cogeneration  
8 facility is designed. There will be some cogeneration  
9 potential that meets those tests in the pulp and paper  
10 industry.

11 Q. Because they are a large steam user?

12 A. Correct.

13 Q. So is that 1,000 megawatts going to  
14 be met?

15 THE CHAIRMAN: I don't know how this  
16 panel can answer that question.

17 The non-utility generation details were  
18 discussed in Panel 5. The position of this panel is  
19 that they are going to continue with those matters in  
20 which they have contractual obligations or have made  
21 commitments, but they are going to review and consider  
22 the ones that they haven't in light of the needs, and  
23 they are going to give priority to renewables and  
24 high-efficiency cogeneration. Now within that context,  
25 that's their evidence at the moment.

1 Have I got it right?

2 MR. SNELSON: Yes, you summarized it very  
3 well.

4 MR. GREENSPOON: I guess the question I  
5 have, Mr. Chairman, is how do we test a panel that's  
6 happened five months ago as to whether these principles  
7 are being met? When do we go back and examine?

8 THE CHAIRMAN: I think all the questions  
9 about the availability of NUG generation in Northern  
10 Ontario was exhaustively gone into in Panel 5, as I  
11 recall it.

12 MR. GREENSPOON: But since the Update,  
13 Mr. Chairman, we have a different philosophy of  
14 non-utility generation.

15 THE CHAIRMAN: We have generally new  
16 philosophy which has been announced and which has been  
17 dealt with and we have what this panel has said in its  
18 evidence. But to have talk about specific projects in  
19 specific parts of the province, I don't know whether  
20 that is going to get us anywhere.

21 MR. GREENSPOON: I have given the panel  
22 and Mr. Lucas, as well as my friend, a letter dated May  
23 14th. I would ask that that be made an exhibit.

24 THE REGISTRAR: That will be No. 689.

25

1       ---EXHIBIT NO. 689: Letter dated May 14, 1992, from  
2                                   Ontario Hydro.

3                   THE CHAIRMAN: Just to finish off the  
4       thought, the people that have the 1,000 megawatts in  
5       Northern Ontario don't have to negotiate their position  
6       through this hearing; they can negotiate that directly  
7       with Ontario Hydro.

8                   MR. GREENSPOON: Yes. Well, I guess  
9       that's the point this letter, Mr. Chairman. This is  
10      letter from Ontario Hydro to a non-utility generator,  
11      signed by Mr. Vyrostko, dated May 14th, 1992.

12                  Q. Mr. Snelson, I would ask you to look  
13      at option No. 3, which is the 10-year rate that most  
14      non-utility generators would be looking at.

15                  MR. SNELSON: A. I believe option 3 is  
16      only available to renewable resource based projects.

17                  Q. Okay. Then let's talk about  
18      renewable resource-based projects. The buyback rate is  
19      down 4-1/2 per cent, is that what it says?

20                  THE CHAIRMAN: I don't know whether it  
21      makes a difference. Are you talking about projects up  
22      to 5 megawatts? Is that the context this is in?

23                  MR. GREENSPOON: Yes. That's the first  
24      paragraph, Mr. Chairman.

25                  MR. SNELSON: That's what it says.

1 MR. GREENSPOON: Q. That's what this  
2 says. So that is Hydro buyback rate for this year?

3 MR. SNELSON: A. For these...

4 Q. For option 3?

5 A. For new, I believe it says it's for  
6 new renewable resource based projects.

7 Q. So that's the non-utility generator  
8 who wants to put in a hydraulic site under 5 megawatts  
9 and sell it to Hydro for 10 years?

10 A. That is the rate that they would get  
11 and they would get that rate fixed for 10 years, which  
12 is a higher rate at the front end to give them better  
13 coverage of their capital costs.

14 Q. Yes?

15 A. And the other rates would escalate at  
16 the inflation rate, and so --

17 [4:37 p.m.]

18 Q. But it is down 4.5 per cent from last  
19 year?

20 A. I would expect that a lower forecast  
21 of inflation would tend to reduce the Option 3 rate by  
22 more than it would other options because the rate is  
23 held constant and you are being given in that constant  
24 rate compensation for the forecast inflation, and if  
25 the inflation is less then would I expect that rate to

1 be less.

2 Q. And I guess just to give one more  
3 example, and it may be too specific, and if you can't  
4 answer the question that is fine, but my understanding  
5 is that those projects that are already on the queue,  
6 that are already lined up with bids to Ontario Hydro,  
7 the new rules will not apply to those already in line,  
8 so that those that are not in line even though they may  
9 meet the new energy efficiency test, in Northern  
10 Ontario, for example, they can't bump those that are  
11 already waiting in line who don't meet the energy  
12 efficiency test? Is that Ontario Hydro's policy?

13 A. When you say 'new rules' you are not  
14 referring to this exhibit anymore?

15 Q. No. No. Sorry, I wasn't clear. The  
16 rules, that is, that we heard about in Panel 5 about  
17 the 6,600 kilowatts, or BTUs per kilowatt.

18 A. Yes?

19 Q. If you were already in line when  
20 those new rules came up they didn't apply to you, but  
21 if you are a new project now that meets those rules you  
22 can't -- you are not going to bump somebody even if  
23 they haven't signed a contract; Hydro's policy is to  
24 continue negotiating with those people that are in  
25 line? Is that your understanding?



1                   A. We are continuing to negotiate with  
2 those that have status to negotiate, and that is I  
3 think what you mean by 'in line'.

4                   As of Panel 5 the view was that the new  
5 guidelines that were put forward and discussed - and I  
6 think, to be specific, they were put forward in Exhibit  
7 346, which was made available part way through Panel  
8 5 - and that did not at that time apply to those who  
9 had status to negotiate.

10                  Since that time, and I believe that was  
11 around December time, it was announced that because of  
12 the even greater number of megawatts that was expected  
13 from these facilities that those negotiations with  
14 those who had been in line had been suspended, and the  
15 negotiations were subsequently resumed but with a view  
16 to having those projects meet the guidelines, too.

17                  Q. But, if they don't, will they be not  
18 negotiated; is that what you are saying?

19                  A. I can't say that for sure, but the  
20 objective of the negotiations was to have the projects  
21 meet the guidelines for the high efficiency  
22 cogeneration, to delay in-service dates, to better  
23 match needs, and I think those are the two principal  
24 ones.

25                  Q. Well, let's forget about that issue

1 for a moment, then, about what bumping or who is in  
2 line or who is not.

3 From a planning perspective, what is  
4 Hydro's position on projects now that come up, for  
5 example, the project in Hearst which you might have  
6 heard about, that meets the efficiency test? Has the  
7 Update changed Hydro's planning with respect to that  
8 because of the surplus or the possibility of a surplus?

9 THE CHAIRMAN: This is a project that  
10 meets the tests, the renewable test or the high  
11 efficiency test. Is that what you are --

12 MR. GREENSPOON: Yes, a cogeneration  
13 project that meets the heat test.

14 THE CHAIRMAN: We assume that is what...

15 MR. GREENSPOON: Yes, I gave one as an  
16 example, but any project in the future.

17 THE CHAIRMAN: All right.

18 MR. SNELSON: I couldn't comment on the  
19 specific proposal for Hearst.

20 We have given as our transcript  
21 undertaking, which is Exhibit 322.21, an Update of our  
22 non-utility generation positions, and on page 3 of that  
23 undertaking then it does list some of the actions that  
24 we have taken since Panel 5 was on the witness stand.

25 It says that:

1                   With respect to future proposals - and  
2                   I am reading now - Ontario Hydro has  
3                   decided to accept no new proposals for  
4                   projects over 5 megawatts other than  
5                   hydraulic and some special projects until  
6                   need for the generation is demonstrated.  
7                   However, Ontario Hydro will continue to  
8                   accept proposals for projects of 5  
9                   megawatts or less, provided they meet the  
10                  October, 1991 guidelines.

11                 THE CHAIRMAN: Just one moment. I  
12                 understand that. What about people who have filed  
13                 proposals previous to that direction? What is their  
14                 status, or do you know?

15                 MR. SNELSON: My understanding is that  
16                 there were proposals that were filed, and some of them  
17                 were classified as having status to negotiate.

18                 THE CHAIRMAN: Yes?

19                 MR. SNELSON: And they have been dealt  
20                 with.

21                 THE CHAIRMAN: In what fashion?

22                 MR. SNELSON: I believe that there were  
23                 13 projects which were at an advanced stage with  
24                 respect to negotiations at the time when these policies  
25                 were changed, and they have been dealt with on a

1 special basis. They are the ones that were suspended  
2 in December and negotiations were reopened around  
3 February.

4 THE CHAIRMAN: So those negotiations  
5 presumably are ongoing and some of them may have been  
6 completed and some of them may not have been?

7 MR. SNELSON: That is correct.

8 THE CHAIRMAN: But the people who you  
9 have commitments with or contracts with, of course, you  
10 would continue.

11 MR. SNELSON: We are continuing, of  
12 course, with anything that we have contracted for.

13 MR. GREENSPOON: Q. And those special  
14 ones would not necessarily meet the heat test, those  
15 13?

16 MR. SNELSON: A. One of the objectives  
17 of reopening the negotiations was to encourage them to  
18 meet the efficiency guideline.

19 THE CHAIRMAN: I'm sorry, my question  
20 was: What about people who you didn't have a  
21 commitment to but who met the test of high efficiency?

22 MR. SNELSON: I believe those that did  
23 not have status to negotiate--

24 THE CHAIRMAN: Yes.

25 MR. SNELSON: --are not proceeding at

1 this time.

2 THE CHAIRMAN: All right. Even though  
3 they made a proposal?

4 MR. SNELSON: Even though they may have  
5 made a proposal, yes.

6 MR. GREENSPOON: Q. And that would apply  
7 presumably to those that haven't made a proposal?

8 MR. SNELSON: A. Well, those that  
9 haven't made a proposal obviously can't proceed until  
10 they do, but we are not seeking --

11 Q. But you are not taking proposals  
12 anyway.

13 A. No, no. Other than as I have  
14 described.

15 THE CHAIRMAN: Other than less than 5  
16 megawatts or special projects?

17 MR. GREENSPOON: Q. Unless they're less  
18 than 5 megawatts, yes.

19 And what does a 'special project' mean,  
20 or do we know that from Panel 5? Is that something I  
21 should know?

22 MR. SNELSON: A. It is not something  
23 that I know.

24 Q. That sounds like one of those clauses  
25 that they put in to use if they have to or if there are



1 special circumstances.

2 A. I don't know the circumstances  
3 surrounding it.

4 Q. All right. So getting back to the  
5 heat test, meeting cogeneration in Northern Ontario, it  
6 is on hold? Anything that hasn't been proposed or  
7 didn't have...what did you call it, status for  
8 negotiation?

9 A. Yes. And if it is more than 5  
10 megawatts.

11 Q. If it is more than 5 megawatts it is  
12 on hold?

13 A. It is on hold at the moment. They  
14 would be among the first types of projects that we  
15 would solicit when we saw a need for generation.

16 Q. And that is what the second bullet on  
17 page 22 of the Update refers to: defer up to 1,200  
18 megawatts of purchase NUGs?

19 A. That is the sort of action it is  
20 referring to, yes.

21 Q. Your evidence today amplifies that  
22 statement by giving us some more specifics on what has  
23 happened since the Update?

24 A. Yes, the list that is on page 22 is  
25 the illustrative assumptions for managing surplus that

1 were used in preparing the Update. We have been  
2 discussing the actual measures that have been taken in  
3 respect of non-utility generation, which were in that  
4 direction.

5 Q. Okay. Now, the last area in your  
6 directions is major supply, I didn't have any questions  
7 until AMPCO raised the issue. I wasn't going to ask  
8 about the moratorium, but this came to my mind that the  
9 pre-engineering was \$240 million. Does that ring a  
10 bell for you?

11 A. That number, I believe, was  
12 extensively used.

13 Q. But that was what had been planned to  
14 be used in pre-engineering?

15 A. It would likely have been of that  
16 order. The \$240 million was used, I believe, in the  
17 government's announcement of the moratorium, and I am  
18 not sure over what time period that money would have  
19 been spent.

20 Q. All right. And my recollection also  
21 is that Hydro committed I think it was around the time  
22 of the Denison contracts being cancelled, around  
23 November or December, maybe earlier, \$240 million to  
24 Elliot Lake.

25 Does that ring a bell with you, Dr.

1 Tennyson? Or I don't know who else on the panel would  
2 know about it.

3 DR. TENNYSON: A. I don't know the exact  
4 number, but I think that it was part of the whole  
5 government initiatives on that that Hydro was asked to  
6 contribute some money.

7 Q. I don't think anything turns -- it  
8 may just be a coincidence the numbers are the same. I  
9 wasn't trying to have --

10 DR. LONG: A. I think it is a  
11 coincidence.

12 DR. TENNYSON: A. Yes.

13 DR. LONG: A. The 240 or thereabouts  
14 associated with the pre-engineering for CANDU "A" was  
15 reallocated to the Energy Management program. I think  
16 that was extensively dealt with on Panel 4.

17 Q. So that 240 didn't go to Elliot Lake;  
18 there is no way we could say that?

19 A. I don't think so.

20 Q. "Yes, we can't", is that what your  
21 nodding means, Mr. Shalaby?

22 MR. SHALABY: A. Yes, we can't.

23 DR. TENNYSON: A. I would agree.

24 Q. All right. In any case, nobody has  
25 been laid off in the Nuclear Division as a result of

1 the nuclear moratorium. Can you answer that question?

2 Or maybe you can't answer that.

3 It sounds like Mr. Campbell didn't want  
4 me to ask that.

5 MR. SNELSON: A. There have been major  
6 restructurings and movements of staff within Ontario  
7 Hydro. The project which was the project for the  
8 preliminary engineering of the next nuclear station was  
9 indeed stopped as a result of that government policy.

10 Q. But, as you said in your evidence to  
11 AMPCO, as it turned out now you didn't need the project  
12 in any event. Isn't that your evidence?

13 A. Generally speaking, yes.

14 Q. So, in fact, the government  
15 moratorium could be said to have saved Ontario Hydro  
16 money?

17 A. As things have turned out, that is  
18 possibly so, but there is also the question as to how  
19 much of that preliminary engineering work would have  
20 been useful at some later date.

21 Q. But it doesn't look like we are ever  
22 going to build another 4 by 881.

23 A. That is an option for the future but  
24 not necessarily the preferred option for the future.

25 Q. And is pre-engineering something like

1 environmental assessment where it has a shelf life?

2 A. I think it is in nature quite  
3 different to an environmental assessment, but--

4 Q. In that respect.

5 A. --like an environmental assessment  
6 some of the preliminary engineering work done will  
7 become outdated if it is left too long --

8 Q. With new AECB standards, as we heard  
9 about, new sites, new environmental controls, new  
10 technologies?

11 A. Those factors could influence it,  
12 yes.

13 Q. And just to finish on that point, the  
14 reason you don't want an approval as Mr. Rodger put it  
15 'to put in your back pocket' for a 4 by 881 is because  
16 you don't think you need one because of DSM, NUGs, and  
17 other factors. Gas prices. I think you listed a  
18 number of them. Is that correct?

19 A. We don't need one at this time, yes.

20 Q. All right. And, in fact, your  
21 forecasts don't indicate it, but it may be that we are  
22 not going to need any more supply in Ontario, major  
23 supply?

24 A. I believe that goes outside of the  
25 bounds of the load forecast, but the load forecast



1 doesn't cover necessarily all possible futures.

2 Q. Does your planning take into account  
3 the possibility of no major supply in the future?

4 A. Not explicitly, but by avoiding  
5 making major supply decisions at this point in time if  
6 at some subsequent round of planning that was to be the  
7 view of the future, then one wouldn't have committed to  
8 that.

9 Q. And is what you are saying that even  
10 though your forecast doesn't anticipate it that you are  
11 planning is broad enough to accommodate that  
12 possibility?

13 A. I don't think I could be quite that  
14 sweeping in the statement, but certainly the nature of  
15 planning is that one should not make commitments before  
16 one needs to, and that does preserve flexibility to  
17 accommodate changes that might reduce the need for  
18 things in the future.

19 Q. And you would agree with me, if there  
20 is one thing we have learned from this hearing is that  
21 long-term planning can be very unreliable and  
22 unpredictable?

23 A. That has certainly been shown through  
24 this hearing. It was known to some degree before.

25 Q. And I guess I maybe need a more

1 direct answer. I will put it a different way.

2 Is it one of the plans that you have  
3 looked at as a planner -- and I take it that the plans  
4 we have even though they are illustrative are the six  
5 plans or the three enhanced plans as in the  
6 supplementary witness statement. When you formulated  
7 those plans is there planning for no supply in any of  
8 those plans, no new major supply?

9 MR. DALZIEL: A. I think you will find,  
10 if you look in Exhibit 646 in attachment D, there is an  
11 illustrative case to lower load forecast, and in that  
12 case there is no new major supply.

13 Q. But that includes Manitoba and the  
14 hydraulic?

15 A. Yes, it does.

16 Q. Yes. I guess when I say 'no major  
17 supply' I mean a plan with no Manitoba Purchase and no  
18 hydraulic.

19 A. Well, if we were to turn to part E of  
20 that same exhibit there is a look at a case to lower  
21 load growth without the Manitoba Purchase and without  
22 the hydraulic program, but we see right at the very  
23 back end of that that there was a major supply facility  
24 put in place.

25 Q. So there is no plan that has no major

1 supply?

2 A. The way you have described it, that's  
3 correct.

4 MR. GREENSPOON: I am about to move into  
5 another area, Mr. Chairman. This might be a --

6 THE CHAIRMAN: You really mean any new  
7 supply, because you had him take out Manitoba and the  
8 hydraulic in order to have the one that...

9 There is a plan with no new major supply,  
10 and that is the lower load growth.

11 [4:55 p.m.]

12 MR. GREENSPOON: No, there is a CANDU at  
13 the end of that, Mr. Chairman.

14 THE CHAIRMAN: No, the first one he gave.  
15 There is one, the lower load growth scenario in one of  
16 the plans does not have any new major supply in it.

17 MR. DALZIEL: That's correct. And then  
18 that was qualified as to you saying that it did include  
19 the hydraulics and the Manitoba Purchase and I agreed.

20 MR. GREENSPOON: You're right, Mr.  
21 Chairman, I apologize for that.

22 Q. Just to be clear, there is no plan  
23 without Manitoba Purchase, without hydraulic and  
24 without any major supply?

25 MR. DALZIEL: A. That's correct.

1 Q. Those are the approvals that you are  
2 seeking at this hearing, Manitoba and the hydraulic?

3 A. That's correct.

4 MR. GREENSPOON: I have little bit more,  
5 Mr. Chairman, maybe another - I don't know - ten pages  
6 of my notes. I don't know how long it will take.

7 THE CHAIRMAN: Well, we better stop then.  
8 We will start again tomorrow morning at ten o'clock.

9 MR. GREENSPOON: Thank you.

10 THE REGISTRAR: Please come to order.  
11 This hearing will adjourn until ten o'clock tomorrow  
12 morning.

13 ---Whereupon the hearing was adjourned at 4:57 p.m., to  
14 be reconvened on Thursday, May 28, 1992, at  
15 10:00 a.m.

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